Report on Industry's First Giant Brain

RAILWAY AGE

July 8, 1957

...some roads now see a bright side

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Tracking Down Maintenance Savings?

The trail leads right to Unit's new S-C Wear Plate — the SELF-CENTERING wear plate designed to cut brake shoe and wheel maintenance costs to the bone. Unit S-C Wear Plates keep your Unit brake beams centered at all times — prevent brake shoes from riding wheel flanges. Specify UNIT S-C Wear Plates on your next order — and watch those savings pile up.

UNIT TRUCK CORPORATION

NEW YORK

The New Vista-Dome Denver Zephyr

A train with many advanced features, Burlington's shiny new Denver Zephyr links Chicago with Denver and Colorado Springs. A popular Zephyr innovation is the Slumbercoach, which offers low-cost room facilities to the coach traveler. Other attractions include the Vista-Dome cars and the authentically western Chuck Wagon car.

Bethlehem wrought-steel wheels and forged-steel axles are part of the standard equipment. This continues a practice of long standing, for the original Burlington Zephyr, back in the Thirties, was also equipped with Bethlehem wheels and axles, as were others that followed.

Today's Bethlehem wheels and axles are the finest ever to come from our shops—more rugged, more durable than ever before. They can be installed with full confidence, for they return a dollar's worth of service for every dollar spent. You are invited to discuss present and future needs with our representatives.

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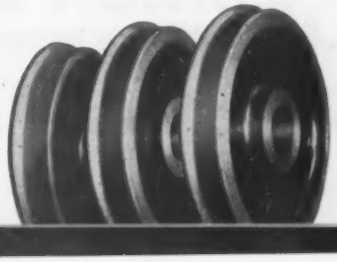
BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation



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Saves Time and Money

UNION NA-15 switch machine . . . provides fast, efficient operation in all kinds of weather. Air is used only to push toggle mechanism past center.

Then a powerful spring completes the stroke and holds switch point firmly closed against the stock rail.

You can step up yard efficiency and obtain greater flexibility of operation by power-operating your busy yard switches. The UNION NA-15 is an electro-pneumatic toggle-spring switch machine designed especially for centralizing the control of yard switches . . . in classification, receiving, departure and flat switching yards.

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Quality First . . . TO LAST

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RAILWAY AGE The Industry's Newsweekly

July 8, 1957
Vol. 143, No. 2

Departments

Current Publications 38
Freight Car Loadings 51
New Equipment 51
People in the News 54
Questions and Answers 46
Railroading After Hours .. 27
Railway Market 51
The Action Page 58

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PAID CIRCULATION THIS ISSUE ...14,443

CONTENTS and
Week at a Glance

RR research can check competition ..... p. 9

The real answer to competition is the vitality of the railroads' research and development programs, says Interstate Commerce Commissioner Tuggle. Despite what some railroad leaders "would have the public believe," he told the AAR mechanical division, "changing federal regulation" won't solve the industry's problems.

Car upgrading goes on the assembly line p.16

Stronger, more durable box cars are rolling off the upgrading line at the Reading's shops in Reading, Pa., where new techniques have increased output by 40%. Insides of the cars get a three-ply lining of plywood, glass cloth and plastic.

New rail-barge facility gets traffic for M&StL .. p.20

The railroad spent $300,000 for a modern rail-river port and terminal at Keithsburg, Ill., its Mississippi River crossing, and thereby attracted to itself a bigger share of business from upper midwest agricultural areas. Expectations are that Keithsburg will grow industrially, and the M&StL plans to expand its port facilities as business dictates.

Seaway—Boon or blight to railroad traffic? ... p.24

No one knows the answer for sure, yet. But, by and large, railroads have accepted the St. Lawrence Seaway as inevitable —and more and more of them are relaxing and preparing to extract from it as much good as possible. According to present plans, the $500-million project will be open for business when ice breaks out of the channels in the spring of 1959.

First RR 'brain begins to hum p.34

The Chesapeake & Ohio's "Univac," first installed on any railroad, is beginning to earn its keep. Things had to move slowly at first, because of technical and personnel reasons— progress in effecting new programs has been largely governed by labor negotiations—but now there's definite acceleration.

Getting more good from the AAR p.58

High on the list of railroad industry "musts" is more effective

familiar twosome?

To a lot of people they are. They appeared in a Hertz advertisement in leading magazines. We said this husband and wife have more time together because of The Hertz Idea!

Here's why. He takes the train instead of driving on out-of-town business trips. Then, to get more done *there* and get home sooner, he rents a new Powerglide Chevrolet Bel Air or other fine Hertz car. He can use the car there, or enjoy the added convenience of Hertz "Rent it here . . . Leave it there" service—now, nation-wide at no extra charge! (on rentals of $25.00 or more). He can drive the car to another Hertz city and leave it without paying return charges for the car! Then, of course, he can get back home by train.

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More people by far...use

HERTZ

Rent a car

Current Statistics

Operating revenues, four months	
1957	$3,459,398,550
1956	3,411,490,931
Operating expenses, four months	
1957	$2,711,046,036
1956	2,650,434,696
Taxes, four months	
1957	$363,854,120
1956	361,667,867
Net railway operating income, four months	
1957	$295,474,543
1956	313,697,804
Net income estimated, four months	
1957	$221,000,000
1956	237,000,000
Average price 20 railroad stocks	
July 1, 1957	91.17
July 2, 1956	102.02
Carloadings revenue freight	
Twenty-five weeks, 1957	17,109,161
Twenty-five weeks, 1956	18,173,767
Average daily freight car surplus	
Wk. ended June 22, 1957	24,596
Wk. ended June 23, 1956	3,524
Average daily freight car shortage	
Wk. ended June 22, 1957	3,134
Wk. ended June 23, 1956	9,858
Freight cars on order	
June 1, 1957	97,006
June 1, 1956	133,072
Freight cars delivered	
Five months, 1957	43,034
Five months, 1956	27,639
Average number railroad employees	
Mid-May 1957	1,004,427
Mid-May 1956	1,063,387

ADVERTISING SALES DEPARTMENT

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Week at a Glance CONTINUED

performance by the AAR. This will likely occur to the degree that management of each member railroad fully informs itself on association problems and the means to their solution.

SHORT AND SIGNIFICANT

Railway Age daily issues . . .

will be published in June 1959 if the proposed simultaneous meetings of the AAR Mechanical Division; the Electrical Section, Mechanical and Engineering Divisions; and the Purchases and Stores Division are held. The daily issues, as in past years, would appear each day of the meetings, and would be in addition to the regular weekly issue.

May's net railway operating income . . .

was down $22 million from May 1956—$81 million compared with $103 million. For this year's first five months, the drop was $40 million—$376 million compared with $416 million. Estimated net incomes for the month and five months were $65 million and $287 million, down $21 million and $37 million from last year.

Possible strike by four unions . . .

faces Chicago & North Western in connection with the road's integration of its 99%-owned subsidiary, the Chicago, St. Paul, Minneapolis & Omaha. Strike votes are reported being taken by the BLE, ORCB, BLFE and BRT; some 8,200 employees are involved. According to the company, the dispute involves working rules.

American Airlines seeks fare relief . . .

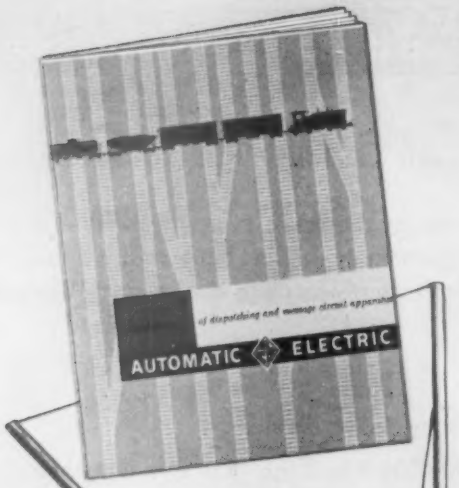
through the CAB that would reduce family fare discounts by 50%, eliminate round-trip discounts, free stopovers and excessively circuitous routing.

Canadian National employee magazine . . .

goes bi-lingual starting with the January 1958, issue. The magazine will be printed in both English and French; employees will receive it in the language they specify.

Aerial photos of the Milwaukee's property . . .

will be snapped in Illinois, Indiana, Iowa, Wisconsin, Minnesota and South Dakota; purpose—to provide better service to industries seeking locations along the road.



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RAILWAY AGE
The Industry's Newsweekly

RR Research Can Check Competition

ICC's Tuggle urges industry to stress development programs; "changing federal regulation," he tells Mechanical Division meeting in Chicago, won't solve the railroads' problems.

The real answer to competition is the vitality of the railroads' research and development programs, Interstate Commerce Commissioner K. H. Tuggle told members of the AAR mechanical division at Chicago June 27.

Despite what "some leaders in your industry would have the public believe," Mr. Tuggle declared, "changing federal regulation" won't solve the railroads' problems.

"The trucking industry in particular," he asserted, "is placing ever increasing emphasis on the quality of its service and this is in direct response to shipper demand. While I am sure that this factor is presently near the forefront of your thinking, you may well consider giving it further weight."

"While your mechanical research is on the increase," the commissioner continued, "it must not only continue in that direction, but more importantly, the increase must be paced to keep up with the demands of your industry, your commerce and your national defense establishment. Meet this demanding overall challenge and you need have no fear as to the future prospects and success of American railroads."

Federal regulation, Mr. Tuggle said, "can never play more than a subordinate role in the accomplishment of maximum safety in your transportation operations. The best place, in fact, the only place for real and lasting accomplishments in carrier safety is inescapably in your hands."

Contrasted to this view was a statement by AAR Vice-President R.G. May who said that the power brake bill in Congress would block progress and changes in operating and maintenance practices and would retard technical development.

"The AAR has urged and continues to urge," Mr. May stated, that the bill "be given no further consideration."

Another picture of the effect of regulation on the railroads' chances of progress came from J.W. Barriger, president of the Pittsburgh & Lake Erie.

Noting that there had never been a time when there was no "railroad problem," Mr. Barriger said that "politicians at one time thought that

A DOUBLE-DECK PASSENGER CAR and a low-slung locomotive were displayed in Chicago's Union Station during the meeting of the AAR Mechanical Division. The double-deck commuter car (above, left), was on the way to the Southern Pacific for service in the San Francisco area. It is one of 21 being built for the SP by American Car & Foundry Division of ACF Industries, Inc. The 85-ft car seats 145 persons. It has self-contained diesel generating facilities for lighting, overhead heating and air conditioning. Interior finish is largely stainless steel and plastics for easy maintenance. SP has 10 similar cars built by Pullman-Standard in service. The locomotive (right, behind commuter car), a Fairbanks-Morse "Speed Merchant," is one of two that will power a Talgo-type train being completed by ACF for the Boston & Maine. It differs from two similar locomotives in service on the New Haven largely in that no provision is made for straight-electric operation from a third rail. The 1,-720-hp diesel engine provides both propulsion and auxiliary power, yielding a minimum of 1,200 hp for propulsion. B&M plans to couple a unit at each end of the train for Boston-Portland service.

the problem was that the railroads earned too much money.

"Unhappily, that is not today's problem. . . For reasons of political expediency, railroads are prevented from assuming the corporate and operating status of a mass production industry."

Collapse the "umbrella of protection" that over-regulation holds over the railroads' competitors, the P&LE chief urged. "Powers of state regulation should be pruned back to those granted by the 1887 Act and the Elkins Amendment of 1903. . . There are no abuses which could not be controlled by those provisions."

Technical phases of the meeting found shipper spokesmen hailing the activities of the loading-rule committees of the division.

Expansion of the gondola-car fleet was called for by L.L. Adams, assistant to the vice-president, U.S. Steel, and a member of the AISI traffic committee. He specifically asked for more mill-type gondola cars and more cars with special loading devices.

Better policing of car distribution is another area that needs improvement so that steel-product cars will not be spotted for loading bulk commodities, Mr. Adams asserted. He said gondola and flat cars for use by the steel industry are scarce because too few of them have been upgraded or cleaned prior to placement for loading.

Poor floors and sides in these cars force the steel industry to resort to expensive packaging because the cars damage lading and present hazards to mill loading crews, he said.

Another complaint about the lack of suitable railroad cars came from the lumber industry during the meeting. It was said that the railroads should anticipate a growing demand for bulkhead flat cars. The lumber industry's labor costs are so high, it was brought out, that increased use of mechanical loading and unloading apparatus and unitized packaging are imperative.

Simplification of interchange rules was furthered by the action of the arbitration committee which recommended letter ballot action on the subject.

A four-man committee set up last February to simplify the rules is continuing its studies with these ultimate objectives: Segregation of mechanical and clerical phases of the code; simplified preparation of billing repair cards; reduction of the price structure to the simplest form for modern machine accounting.

Clarence R. Bland, assistant electrical engineer, rolling stock, Chesapeake & Ohio, was elected chairman of the Division's electrical section. H. P. Wright, electrical engineer, Baltimore & Ohio, was named vice-chairman. The 1958 meeting will be at Chicago.

CTC Comes to the Bangor & Aroostook

W. Jerome Strout (right), executive vice-president of the Bangor & Aroostook, throwing the switch on June 14 to put centralized traffic control into effect over 17.6 miles of BAR track between Northern Maine Junction, Me., and South LaGrange. Looking on are (left to right), Harold C. Duffy, manager of operations, and Robley H. Morrison, chief engineer. The installation eliminated need for double track in the area, and the second track will be taken up this month. Electronic equipment for the project was furnished by General Railway Signal Company.

AAR Board Plans For Faricy Retirement

Member roads of the Association of American Railroads will be asked to approve changes in the association's organization plan which are designed to anticipate the retirement of President William T. Faricy. The proposed changes will be voted upon at a special member road meeting in Chicago July 26.

They would provide for election of a chairman of the board in addition to the existing position of president, the board said in a June 28 statement announcing that the member road meeting had been called. While the statement said nothing about Mr. Faricy's retirement, it did have this to say:

"If the member roads approve the suggested amendment, the board of directors, meeting the same day in Chicago immediately following the member road meeting, will proceed to elect a chairman of the board, who will be chief executive officer; and a president who will be chief administrative officer. It is expected that this separation of the positions of chairman of the board and president will remain in effect until April 1, 1958."

Mr. Faricy is expected to retire at that time. He will become 65 years of age on March 7, 1958. Meanwhile, he is expected to be elected to the chairmanship for the remaining months of his service. He has been AAR president since April 1, 1947.

Prices, Tied to Steel, Go Up on RR Equipment

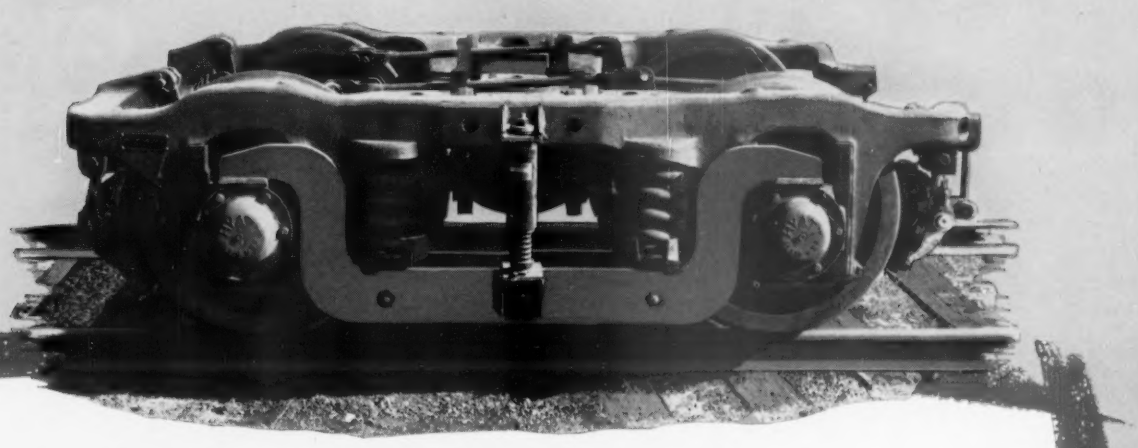
Railroads can expect to find the July 1 steel price rise reflected in their own purchasing costs.

Word from a few equipment suppliers is that they will have to pass on to their customers the steel price boost as it affects their products.

From ACF Industries at New York comes the report that this company will be "unable to absorb" the steel increase because of the close relationship between its contracts and the price of steel.

(*Continued on page* 52)

Repeat Orders Prove Their Value!

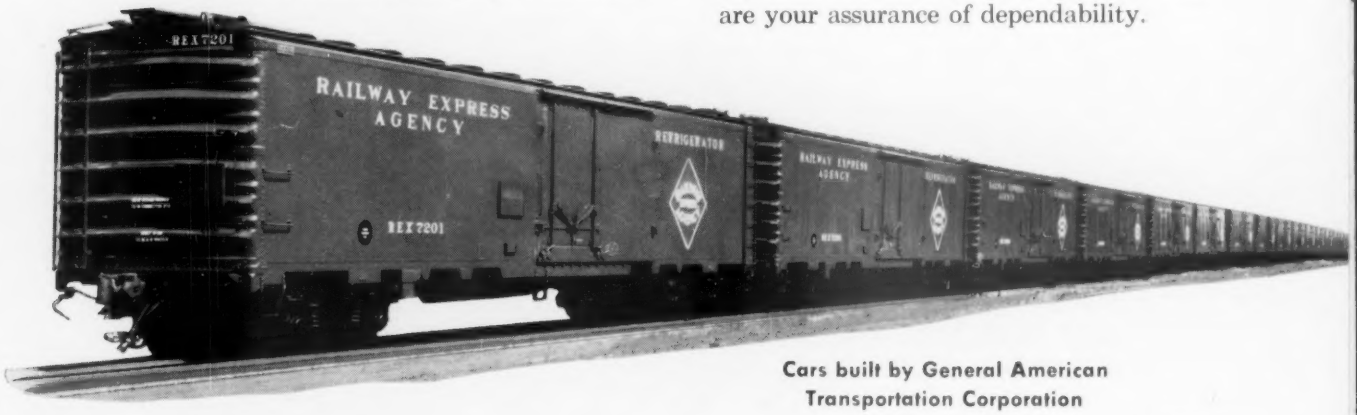


The Railway Express Agency orders Second Lot of 500 Express-Refrigerator Cars with Commonwealth BX Type Trucks

Because of the performance of a previous lot of 500 cars equipped with Commonwealth BX Trucks the Railway Express Agency recently placed a repeat order. Here is *true proof* of satisfactory service.

Equalization, swing motion, coil springs and friction snubbers combine to provide smoother, safer riding of loaded or light cars, protecting car contents and minimizing damage claims. Rigid one-piece cast steel truck frames with integral cross transoms and pedestals insure axles and bearings being in tram at all times. As the truck frame is spring supported, unsprung weight is less than with other types of trucks, reducing impact on rails, crossings and bridges. Wear of brake shoes and brake rigging is at a minimum.

Commonwealth BX Type Trucks are approved for all types of express-refrigerator, box-express and merchandise cars operating in all classes of passenger trains. They are your assurance of dependability.



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Brazilian Railroad Buys 90 of Them

The car has been specifically designed for high-density, commuter traffic, and is equally suited to the requirements of United States railroads as it is to Brazil's Estrada de Ferro Santos a Jundiai.

It is 85 feet long. In Brazil the cars will be electrically powered and operate in units of three, with one power car and two trailers. All are built to AAR specifications.

They have eight bi-parting side entrance doors, staggered, four to a side, for quick entrance and exit.

Seating capacity of each car is eighty passengers. *In addition, there is space for three hundred and twenty standees, giving each three-car train a capacity of twelve hundred passengers.*

These cars bring to a total of 204 Budd stainless steel cars serving the triangle in Brazil contained within Rio de Janeiro, Sao Paulo and Belo Horizonte.

The Budd Company, Philadelphia 15.

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Two bargains in one! Barber Stabilized Trucks save your ladings; save your equipment.

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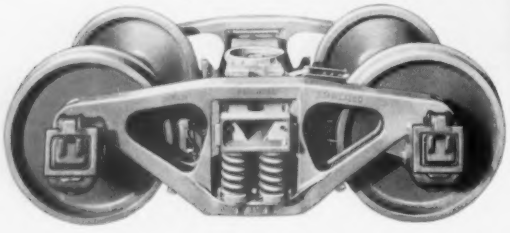

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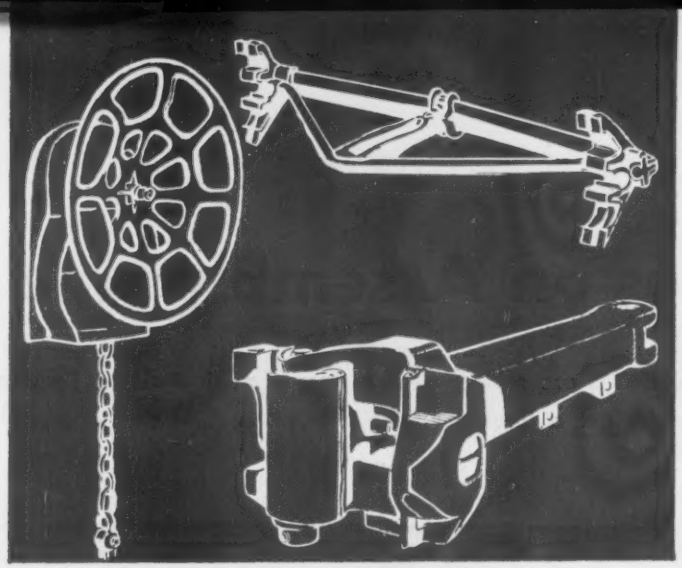

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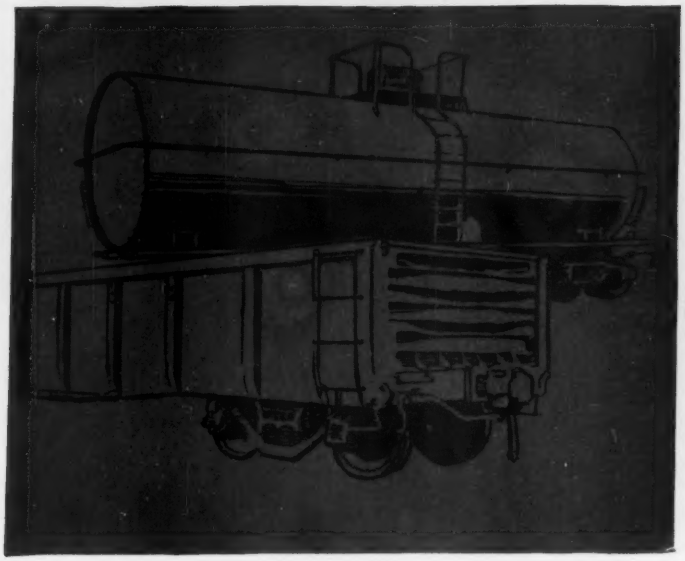
Call us collect—*we can have them on the way to you immediately*—at less than you're trying to pay! Call WAbash 2-0202.



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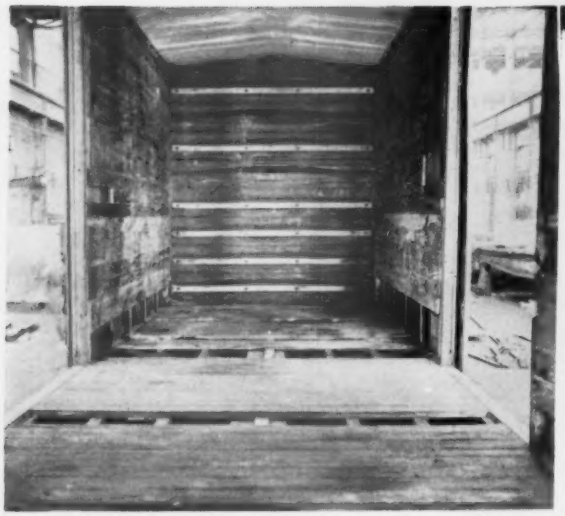
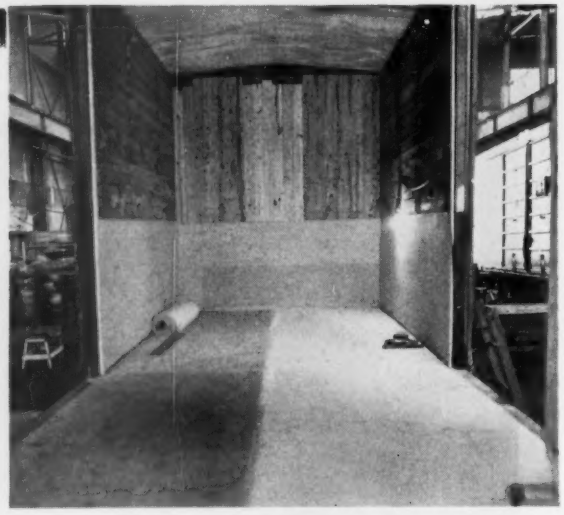
OUTPUT UP 40% AS . . .

Upgrading Goes on Assembly Line

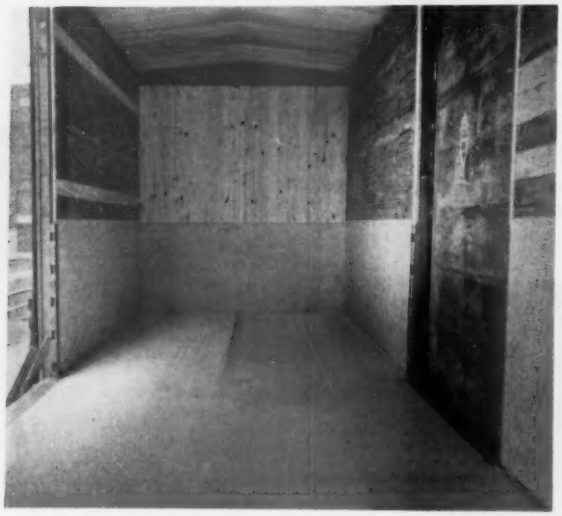
Stronger, more durable box cars are rolling off the upgrading line at the Reading's shops in Reading, Pa. Insides get a three-ply lining of plywood, glass cloth and plastic.



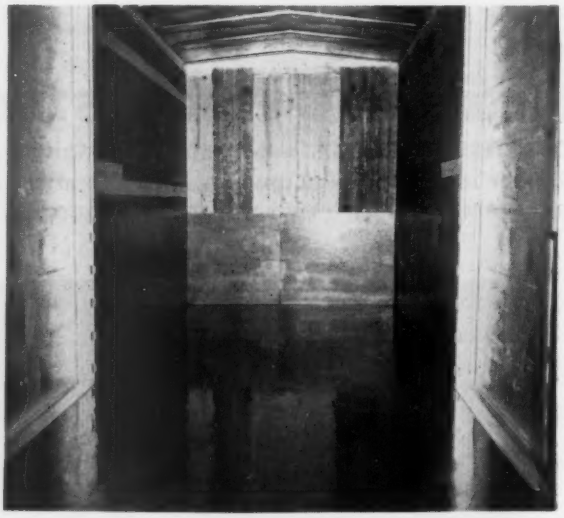
1 **BAD ORDER BOX** moves into assembly line for upgrading at Reading shops. Ten years' hard service left this car with worn floor, lining, end lining and bent ends. Seventy-five minutes later the car will be Class A.



2 **PLYWOOD'S ROLE** appears in first step to give car new life. Floor is covered with ¾-in by 4-ft by 8-ft plywood panels; lining is ½-in plywood, extended 48 inches up sides and ends. Next step is cover new floor with glass cloth material.



3 **TIGHT AND STAPLED,** glass cloth mesh covers plywood floor, but does not extend over lining. Upgrading material is development of two firms—Spring Packing Corp. and Duradek Car Liner. Ends are straightened as car moves along line.

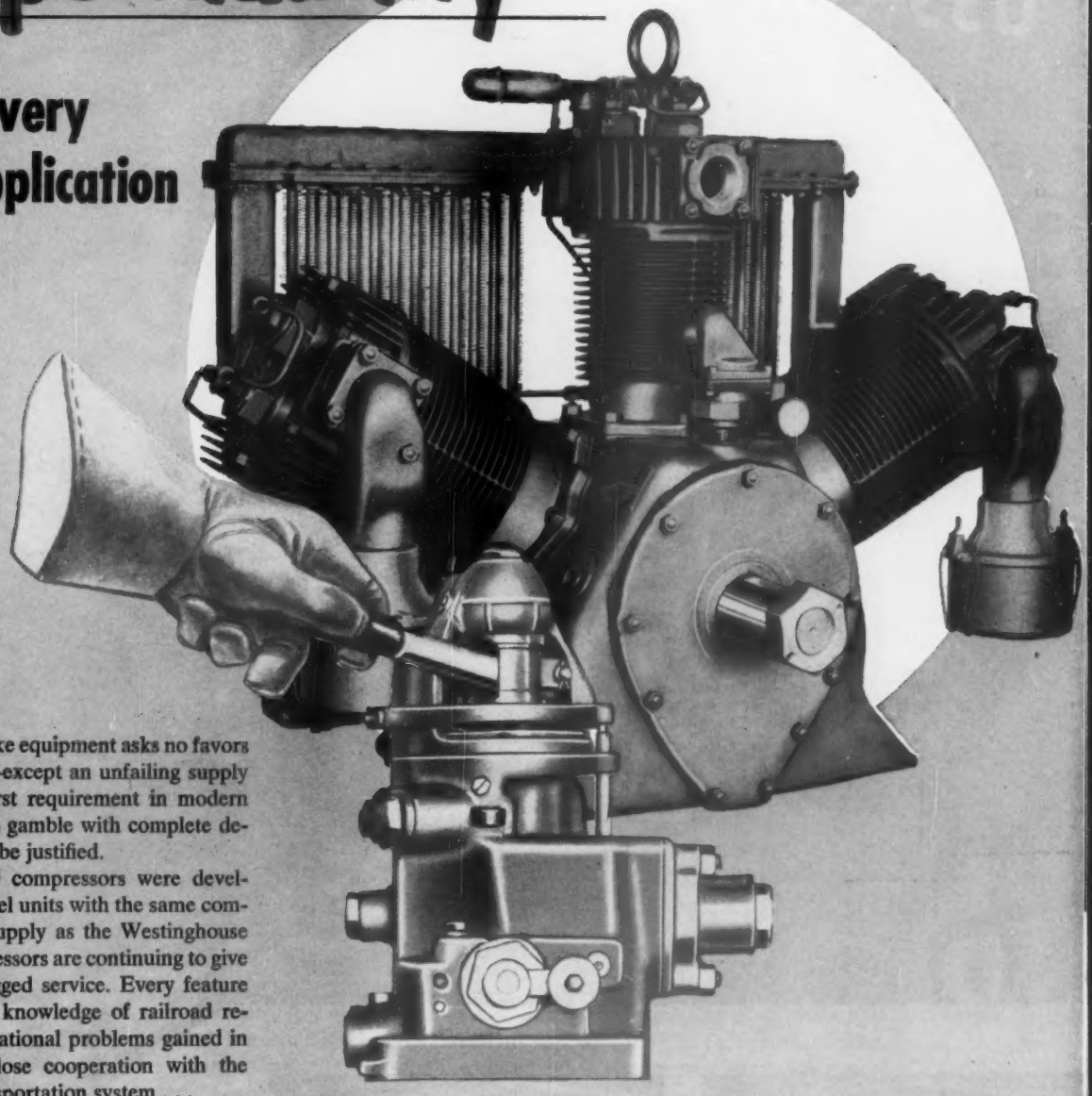


4 **READY TO GO,** car interior now shines with high gloss eye appeal. Plastic is sprayed on floor, then directly on linings to give the car an easy-to-clean interior that won't absorb foreign matter or odors. Slotted metal door posts are added.

WESTINGHOUSE CD COMPRESSORS

put dependability

behind every brake application



Westinghouse Brake equipment asks no favors on any assignment—except an unfailing supply of air. That's the first requirement in modern train control, and no gamble with complete dependability can ever be justified.

Westinghouse CD compressors were developed to provide Diesel units with the same completely reliable air supply as the Westinghouse Steam Driven compressors are continuing to give through years of rugged service. Every feature reflects the intimate knowledge of railroad requirements and operational problems gained in over 80 years of close cooperation with the nation's leading transportation system . . .

1. Radiator-type intercooler between high pressure and low pressure cylinders reduces temperature of discharge air and increases efficiency.
2. Full-pressure type lubrication system maintains even, constant flow of filtered oil to connecting rod crankshaft bearings and wrist-pin bearings.
3. Throw-off of oil from connecting rod bearings lubricates cylinder wall and also main crankshaft ball bearings.

Westinghouse Air Brake
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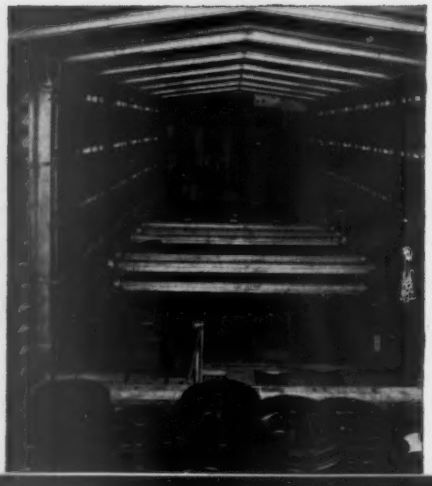
A Message to Management . . .

USS COR-TEN Steel is the logical choice



With easily handled, quickly installed "Wonder Bars," "DF" cars are loaded an average of one-third heavier than ordinary cars in comparable service. Thus the "DF" Loader, if applied to all boxcars now in service, would give the railroads about 10,000,000 tons additional carrying capacity—equivalent to 26,000 extra cars.

(Left) On LCL shipments like this, the "DF" Loader elimi-nates the need for costly, specially fitted dunnage. Estimated savings on dunnage and damage run into millions of dollars yearly.

(Extreme left) Bulkheads, backed up by USS COR-TEN Steel "Wonder Bars," separate the loads; supported by "Wonder Bars," they form multiple decking which per-mits floor-to-roof loading.

for freight car modernization . . .

Built with USS COR-TEN High-Strength, Low-Alloy Steel . . . The Evans DF Loader increases boxcar revenue up to 300%, ensures damage-free delivery

TODAY the distinctive "DF" stencil on a boxcar stands for a number of things—all good.

To the railroads it means a car that can carry at least one-third more load, frequently twice as much as usual. A car that will increase revenue earnings as much as 300%. That saves money by reducing turnaround time, car cleaning costs and repairs. That, by practically eliminating damage to lading, saves an average of $31 on every load.

To shippers, "DF" on a car stands for easier and faster loading and unloading. Heavier, full capacity loads. Less demurrage. No need for dunnage—an average saving of about $50 per load. And in particular, the "DF" stencil marks a car that will deliver even hard-to-handle shipments in perfect condition.

No wonder then that railroads, shippers—and consignees—are enthusiastic about the Evans DF Loader. No wonder that nearly 30,000 cars are now equipped with this time-cutting, cost-cutting, load-locking device that by millions of *damage-free* ton-miles service on 47 Class I railroads has established a record for safe, sure, money-saving delivery.

The secret of the Evans DF Loader's performance is its ability to squeeze out all slack in the lading—and keep it out. Sturdy cross members, easily handled by one man, anchor the load into the very structure of the car itself so that it cannot move vertically or laterally.

Each of the "DF" bars, which lock into horizontal steel rails running the length of the car, will safely brace 4,000 lbs. of load against lengthwise shifting and can support 1,200 lbs. of vertical load. Yet—because they are made of high-strength, low-alloy steel—they weigh only 72 lbs. (Carbon steel construction, to give the same strength values, would have to be at least one-third heavier—too heavy for one man to handle.)

Used in parts of the Evans DF Loader, USS COR-TEN Steel not only provides the high strength/weight ratio required but in addition ensures high resistance to abrasion, shock and impact. And, because COR-TEN Steel's resistance to atmospheric corrosion is 4 to 6 times that of carbon steel, parts will resist corrosive attack and stand up far longer in service.

Its use in this application is typical of the many ways in which USS COR-TEN Steel has helped to modernize freight car equipment of all kinds. The more than 200,000 freight cars built lighter, stronger and longer-lasting with this superior steel have been so outstanding in performance that, to railroad men, "Built with USS COR-TEN" just naturally means "the best in freight car construction."

"USS" and "Cor-Ten" are registered trademarks.
"DF" is a trademark of Evans Products Co.

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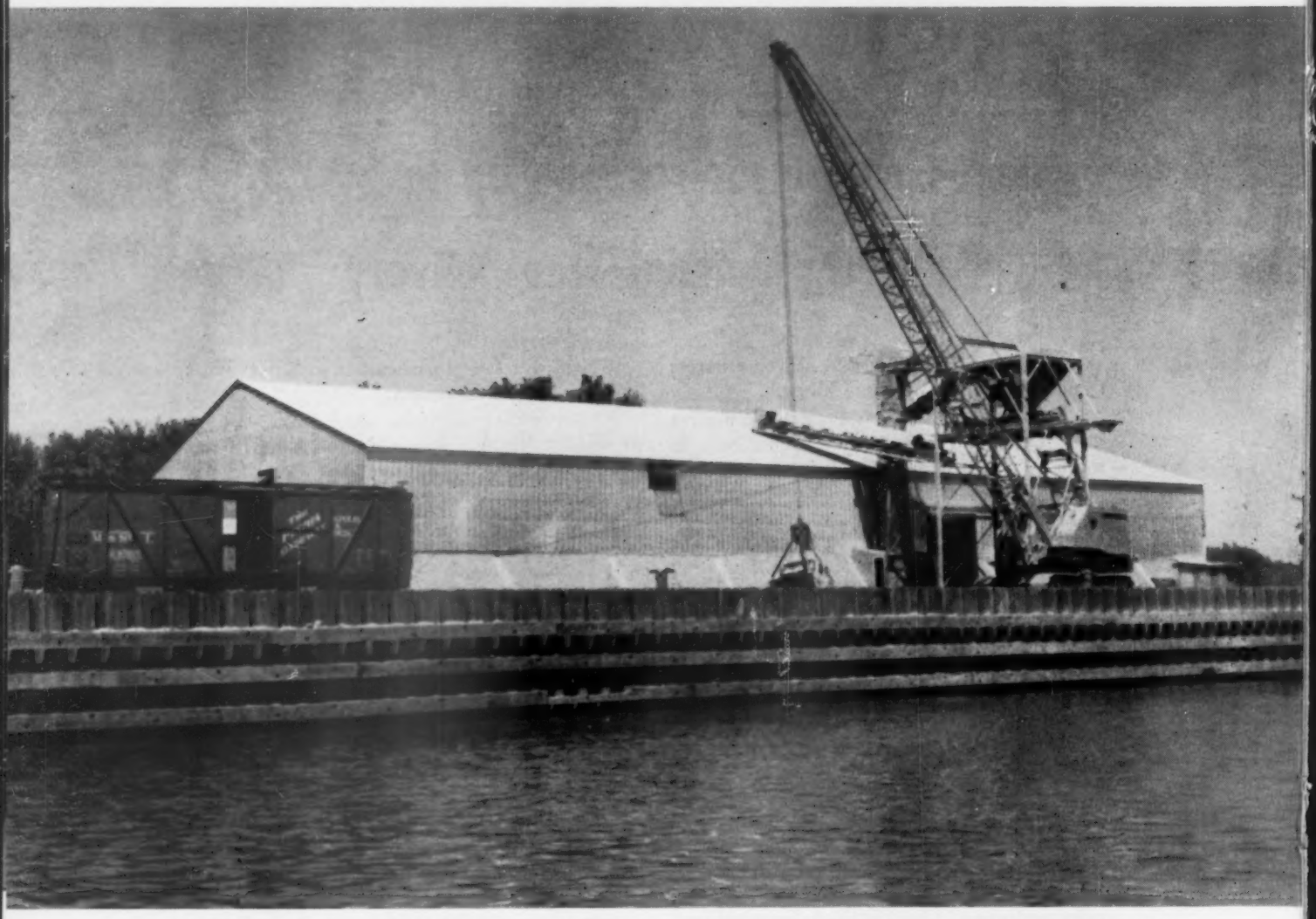
UNITED STATES STEEL

This Rail-Barge Facility Gets Traffic

It cost M&StL $300,000 for a new rail-river port and terminal at Keithsburg, Ill. The road expects a pay-off in a bigger share of business from Upper Midwest agricultural areas.



RAIL-BARGE port at Keithsburg, Ill., is designed to transfer bulk materials from barges to cars, or vice versa. The crane with the clamshell bucket transfers materials from barges to the track hopper.

The Minneapolis & St. Louis has picked up some new business. There were no rail-barge transfer facilities of any size on a 540-mile stretch of the upper Mississippi river—between St. Louis, Mo., and Winona, Minn. Farmers in the Midwest were demanding more fertilizer than ever before to produce top crop yields. Other water-hauled bulk commodities also were in demand. So the M&StL built a modern rail-barge transfer facility at Keithsburg, Ill., its Mississippi crossing. This town, on the east bank of the river, is about half way between St. Louis and Winona.

The new port, built at a cost of about $300,000, is served by two spur tracks of the M&StL. It includes a barge slip, a fire-resistant warehouse and loading and transferring equipment, and is capable of transferring 1,500 tons of bulk material to 30 box cars in 20 working hours. It can also transfer commodities from cars to barge, from barge to warehouse and from warehouse to cars or barge.

for M&StL

The facility is designed to handle iron and steel products, phosphate, sulphur, sulphate of ammonia, salt, fluorspar, grain and coal to and from barges. Currently, the terminal's largest customer is the International Minerals & Chemical Corp., which ships superphosphate, an important ingredient for farm fertilizers, by barge from ports in Florida and along the Gulf up the Mississippi to farming areas in Iowa, Illinois and Minnesota. The superphosphate is transferred at Keithsburg from barge to cars, or is warehoused. The barges, which have capacities ranging from 1,100 to 2,100 tons, are unloaded at the rate of about 100 tons per hour.

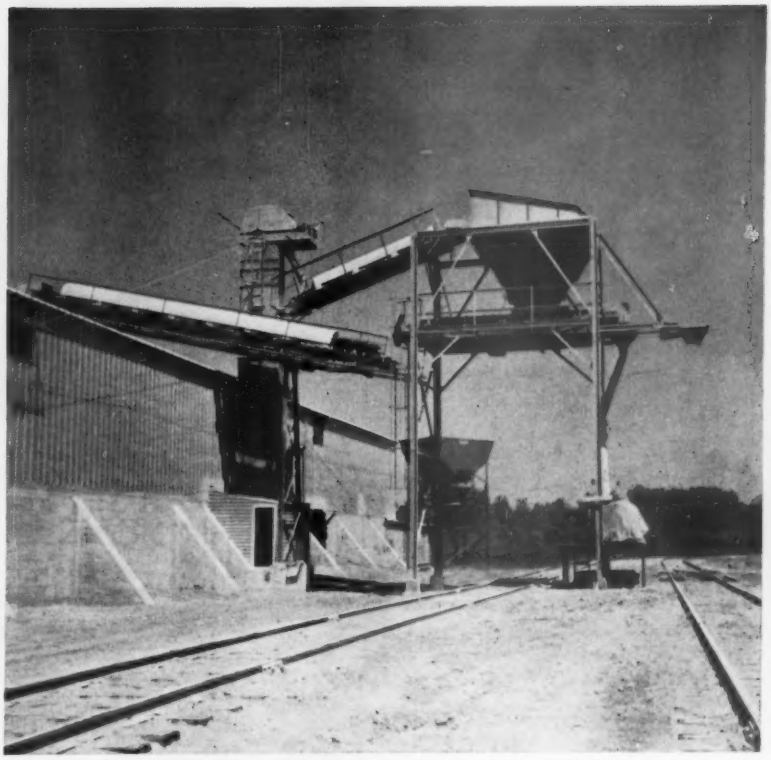
The barge slip is 110 ft by 400 ft and is dredged to a depth of 10 ft. It can accommodate four barges, two to each side. The dock is formed by steel sheet piling and timber wales, and this construction is carried around on the river side so additional barges can be moored there. The material dredged out of the slip was used to provide fill for the dock structure.

The warehouse, 80 ft by 180 ft, is a Butler-built prefabricated steel structure, erected above reinforced-concrete curtain walls, 11 ft high, which are counterforted or buttressed on the outside to resist the pressure of bulk materials stored inside. Total height of the sidewalls is about 30 ft, giving the building a storage capacity of 10,000 to 12,000 tons. The steel portion of the structure is of rigid-frame construction so that the floor area is entirely free of posts or columns. The floor is concrete.

Material Handled by Conveyors

For delivering and distributing bulk materials in the building, the warehouse is equipped with two overhead rubber-belt conveyors which extend the full length of the building, each serving one-half the width, and a higher cross conveyor, which deposits the material onto the side conveyors. All conveyors are reversible in direction so that bulk materials can flow to all parts of the warehouse.

The cross conveyor is fed through the roof by an outside belt conveyor which in turn is fed by a 24-in. belt conveyor beneath a 15-ton track hopper. This hopper is elevated above the tracks. The conveyor under the hopper also is reversible so it can load directly into top hatches of hopper cars standing on either track through openings provided over the tracks. Box cars are loaded by a pendant swivel conveyor, which is brought into the car, and a 36-in. slinger. The latter is mounted on wheels and can be turned to cast in any direction for filling the car.



TRANSFER EQUIPMENT includes a 15-ton track hopper and a conveyor-and-chute arrangement which permits loading directly into the top hatches of hopper cars, into box cars, or into the warehouse for storage.

Barges are unloaded by a Koehring crane, equipped with a 1½-cu yd clamshell bucket, working on a 40-ft runway between the dock and railroad tracks. It has an 85-ft boom and drops its loads into the track hopper. A 1¾-cu yard Hough Payloader is used for scooping the barges clean. It is lifted in and out of the barges by the crane. The tracks are so graded that empty cars can be moved easily into position beneath the track hopper by the Payloader.

Lessee Sets Transfer Charges

For tranferring material from the warehouse to cars, the Payloader scoops the material up from the floor and deposits it into a small hopper at the base of a vertical bucket-type conveyor. The latter deposits its loads into an outside overhead conveyor leading to the track hopper, beneath which the cars are loaded.

The terminal is operated from March 1 to December 20 each year under a lease agreement by Fred R. McKenzie & Co., Galesburg, Ill. This company employs a two-screw tow boat at Keithsburg for moving the barges into loading position. The company also sets the charges for transfer service.

By rail, Keithsburg is 12 hr from the Twin Cities and 4 hr from Peoria. Currently, the M&StL has not entered into any agreement for through rates with the barge carriers. All traffic in and out of Keithsburg moves under local rates.

The railroad feels that Keithsburg will grow industrially and plans to expand its port facilities as business dictates. "We think Keithsburg is ideally located as an outlet for the distribution of products throughout the Midwest," says A. W. Schroeder, M&StL president. "Our plans and aims," he continued, "are to provide our shippers with a fine rail-river service and, at the same time, develop industrial sites."

HAULING A LOAD...REPAIRING THE ROAD

ESSO DIOL RD 77—Specifically developed for the heavy-duty engines of modern locomotives, Esso Diol RD 77 assures peak efficiency and long, trouble-free engine performance—high standards that mean extra lubrication economy.

ESSOLUBE HD—For smaller, high-speed diesel engines in maintenance-of-way equipment, Essolube HD detergent-type motor oil provides dependable engine protection . . . cuts oil consumption with long-lasting lubrication.

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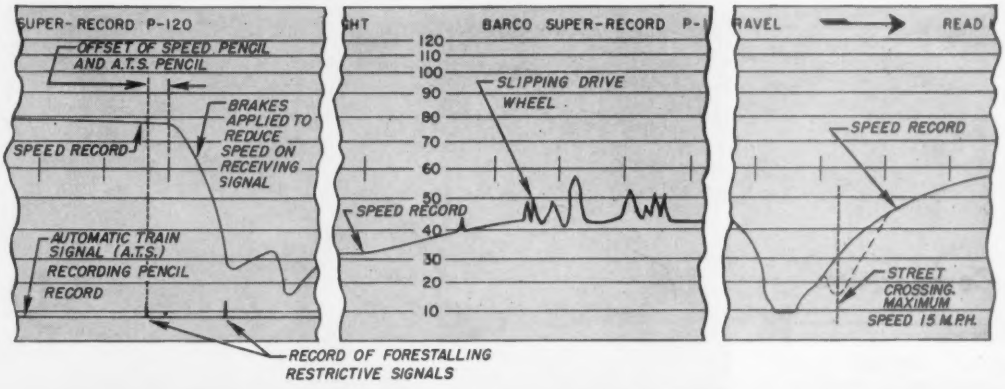

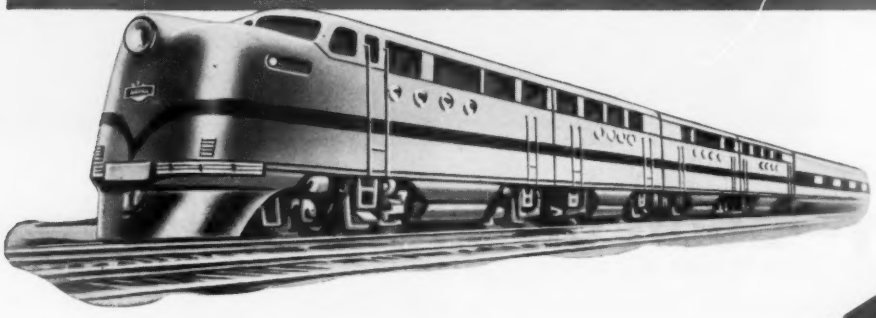

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It is now widely known that Barco Speed Record Tapes are (1) highly dependable and accurate, (2) invaluable in case of emergency, (3) the mark of efficient, modern operation.

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The Competition

RAILROAD BRIDGE looms above construction work on a Seaway lock at Montreal. As work progresses, lakeside cities are pushing ahead plans for deepening their ports.

Seaway—Boon or Blight to Railroad

If all goes as the planners hope, the St. Lawrence Seaway will be open for business when ice breaks out of the channels in the spring of 1959. Today, approximately two years from that time, this much can be said for the vast water transportation and hydroelectric power project:

- It will cost far more than originally estimated.
- Its effect on the movement of freight will be felt slowly—over a period of at least 10 years.
- By and large, the railroads have accepted it as inevitable—and a growing number are relaxing and preparing to get as much good as possible out of it.

Costs Going Up

When all the construction work is completed on the St. Lawrence and the other channels which connect the Great Lakes with the Atlantic, a channel with a minimum depth of 27 ft will be available from such ports as Chicago and Duluth to the sea. The St. Lawrence Seaway itself, which involves work by both the U.S. and Canada in the section of the river west of Montreal, is only a relatively small part of this picture—but one that is growing increasingly expensive even before it's half completed.

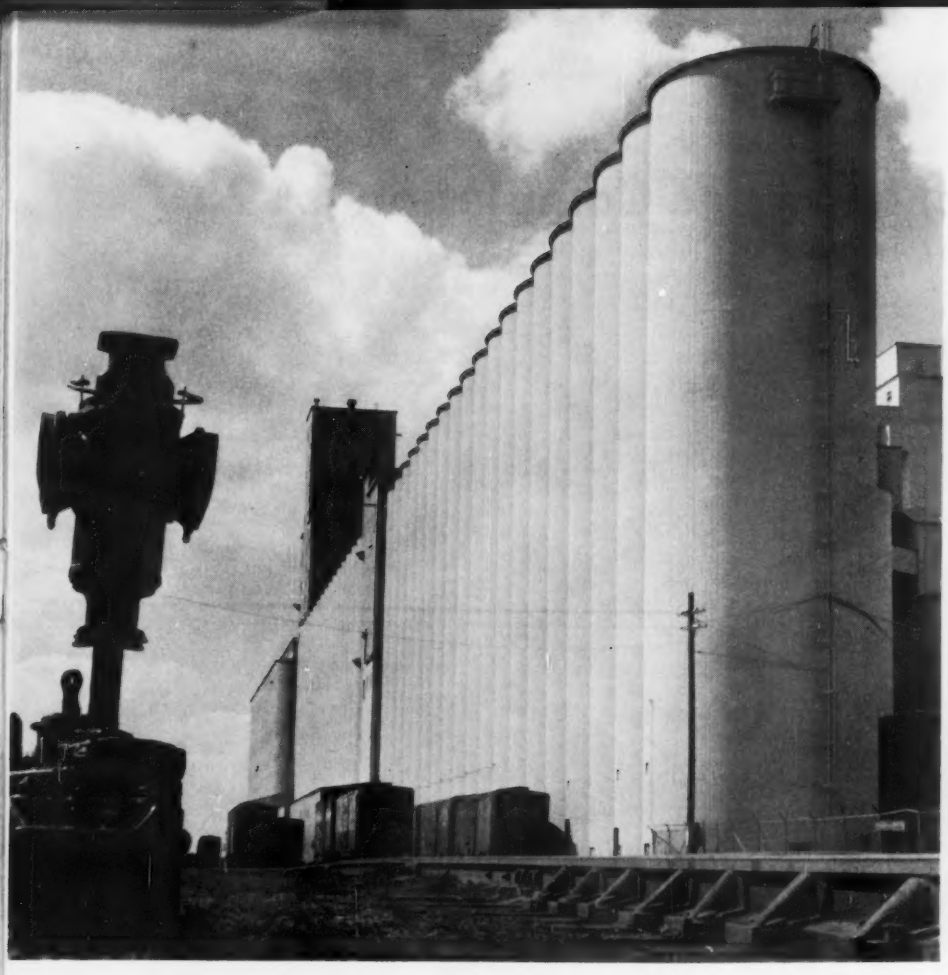
Congress currently is mulling over the request of the St. Lawrence Seaway Development Corporation for a hike in that agency's borrowing authority to $140 million, an increase of $35 million. Originally, the Seaway was to cost the U.S. $100 million, Canada $200 million. Another $600 million is going into the related hydroelectric power development.

Last month, construction began at Detroit on the $136 million deepening of channels which connect the Great Lakes. And in the survey stage is a federal program for deepening lake harbors to accommodate the deeper-draft vessels which are expected to use the Seaway. Today, in Chicago alone, a $24 million first-stage project at Lake Calumet is being wrapped up, in what may some day be a $194 million municipal port development.

But excluding what probably will be spent to keep up local pride, even in lake cities which may never be ports of call for ocean-going vessels, the overall St. Lawrence-Great Lakes waterway development has recently been estimated to cost close to a half billion dollars.

Tolls Still a Question

How much—if any—of this cost will be covered by tolls on Seaway users is still uncertain. Toll rates haven't been set; the level at which they'll be pegged is the heart of a controversy right now. Only a few days ago a spokesman for the Great



The Stakes

EXPORT GRAIN may shift to Seaway transportation. Eastern roads, who might lose business if that happens, look to industrial development to offset any drop in traffic.

Traffic?

No one knows for sure, yet. Consequences won't be the same in all areas. The opinion prevails that if rails lose export grain business to the waterway, they'll gain substantially in industrial hauls.

Lakes-St. Lawrence Association told a Senate committee that increased costs of the Seaway threaten to double annual charges—and the association "cannot accept . . . that increased tolls meet all these increased costs." Potential Seaway users, by and large, are taking the position that tolls set too high will discourage patronage of the waterway and defeat its purpose. The argument for making the Seaway self-liquidating through tolls was summed up not long ago by Perry M. Shoemaker, president of the Lackawanna, in a talk before the Propeller Club of New York.

Mr. Shoemaker urged that all interests of the Port of New York (including the Lackawanna and many other eastern railroads), "actively campaign to be certain that total and correct capital costs, and all operating and maintenance costs, of the Seaway are reflected in the toll schedule and thus that tolls be determined on a fully self-supporting basis as Congress initially provided."

Although the Lackawanna stands far from alone among railroads on the toll question—compensatory tolls were, of course, part of the railroads' official industry position when the Seaway bill was before Congress—a substantial amount of railroad thinking has shifted to the question of how the Seaway will affect rail traffic.

Generally speaking, the position of most railroads is that it's too early to tell for sure. For one thing, they point out, the level of tolls will have a bearing on Seaway traffic. And for another, the full capability of the Seaway wont be realized for a good many years—and even when it is, many analysts are inclined to discount the soaring estimates of traffic made as part of the campaign to get the Seaway under way.

The St. Lawrence Seaway, now approximately 40% completed, is expected to be ready in the spring of 1959. But the Great Lakes connecting channels won't be deepened until 1961. And even then, there are comparatively few lake harbors which are deep enough to accommodate the size of vessel for which the Seaway is being dug.

A recent Army Corps of Engineers map shows that with the exception of harbors on Lake Erie, most Great Lakes ports are no deeper than 21 ft. The deeper ones largely are coal and ore ports which are part of the overall traffic picture today.

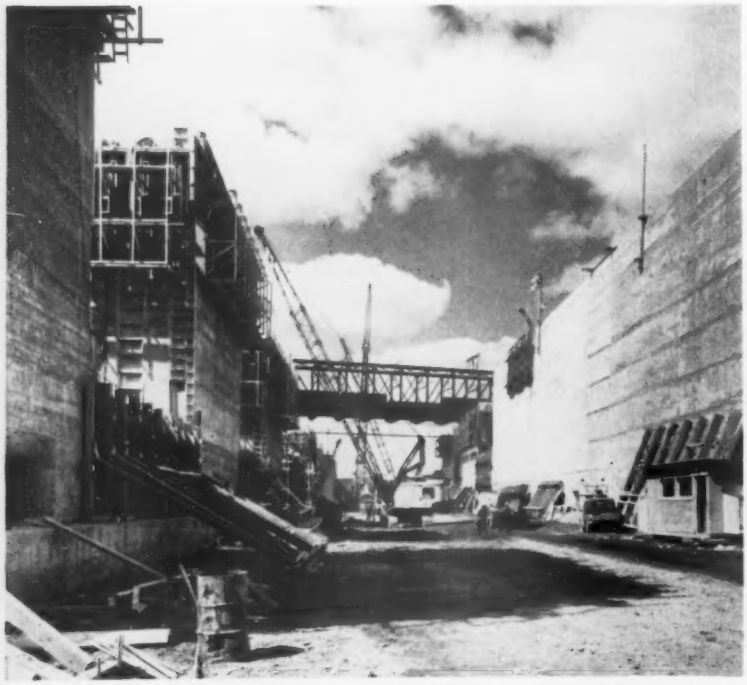
East-West Split

One midwestern economist recently summed up what he conceives to be the railroads' current attitude toward the Seaway: "You could draw a line down through Chicago and divide the railroads into two camps. East of the line, they're against it;

Target Date for Seaway's Completion Is 1959

HEAVY EQUIPMENT swarms over bed on Long Sault Canal as evacuation job moves toward completion. Seaway channel will have minimum depth of 27 ft.

RELOCATED RAILROAD, a 40-mi double-track line of the Canadian National, goes into operation later this summer. Parts of old line will be flooded.



RISING COSTS plague Seaway builders. Requests now before Congress seek a $35 million increase in borrowing authority and prospective users are worrying about high tolls.

HIGHWAY OVERPASS will cross relocated CNR line north of Morrisburg, Ont. Total construction cost of the Seaway and allied projects like this are now estimated at $340 million.

west of the line, they think it'll help them."

Even so, the evidence shows that some eastern railroads believe the prospect of competition from the Seaway has its brighter side. A recent study describing New York Central industrial sites in the Buffalo area noted that "Consideration should also be given to the advantages of the St. Lawrence Seaway and its contribution to enhancing the industrial development potential of the 'Greater Buffalo-Niagara Area' in that it will elevate the status of Buffalo from that of an inland water port to the level of a world port."

The Central's official attitude is summed up by President Alfred E. Perlman in these words:

"With the advent of the St. Lawrence Seaway to the north of us, the New York Central is faced with a new formidable competitor. We definitely intend to meet the Seaway competition wherever we can profitably do so through modernizing our services, rates, and handling of freight. Additionally, we expect that as result of the Seaway northern New York State and the southerly shores of Lake Ontario, Lake Erie and Lake Michigan will enter into an area of great industry expansion, and it is the intention of the New York Central to participate liberally in the tonnage that will be generated by such industrial growth. This growth, timed to coincide with the Seaway power and transporation, will definitely be geared into the economy and growth of the New York Central in these areas."

The prospect of picking up industrial traffic from the fringes of the Seaway has, in fact, interested a good many roads both east and west. Some are hopeful that, if they lose any export traffic to the boats, they'll make up the loss in industrial business—and perhaps break better than even in the exchange.

The Pennsylvania, for instance, early this year bought the property of Calumet Harbor Terminals, Inc., on the shore of Lake Calumet in Chicago, for some $1.3 million cash. The transaction puts the Pennsy in an admirable position to serve whatever business grows up on the fringe of the port. The Belt Railway of Chicago now has before the ICC a plan to obtain rail entry into the Lake Calumet port, served by the Rock Island.

The Seaway and Grain Traffic

But most analysts think that the Seaway stands to capture from the railroads more export grain traffic than anything else, and so this is getting most consideration on many western roads. To date, though, none is willing to say studies are completed.

Out west, where railroads actually will be tributaries instead of competitors of the Seaway, roads can be

(Continued on page 55)

Railroading After Hours with Jim Lyne

DISGUISED STATIONS—General Manager Dwight A. Smith, Jr., of the Springfield (Vt.) Terminal, has sent me a list of 16 B&M stations in New Hampshire and Vermont which have names differing from those of the towns they serve. In every instance, the name of the town is prefixed by "East," "West," "North" and so on. For example, the station at North Thetford is called Northboro. And the purpose is said to be avoidance of possible confusion in train orders.

Personnel Director R. F. Haley of the Norfolk Southern tells of a couple of adjacent NS towns with similar names (Stantonsburg and Walstonburg)—so the station at Walstonburg was known as Fieldsboro, until just a few years ago. Another town had an Indian name, hard to spell (Chocowinity), so the NS changed its station name to Marsden.

NAMING STATIONS—Speaking of station names, Southworth Lancaster of Boston University says that in Kansas, on the Missouri Pacific's Pueblo line, there are nine stations named in order after the battling list of Charley Comiskey's famous ball team. I ought to know, because that's the part of the country where I grew up; but the naming of those stations came before my time.

Joel E. Fisher (president, Northwestern Terminal, Denver) calls attention to names of seven of Shakespeare's characters, applied to stations on the CPR's Kettle Valley division in British Columbia. Mr. Fisher worked on the construction of this line back in 1913.

C. J. Ownby of Brighton, Colo., points out a list of seven stations on the UP, west of Fairbury, which begin with the first seven letters of the alphabet, in order.

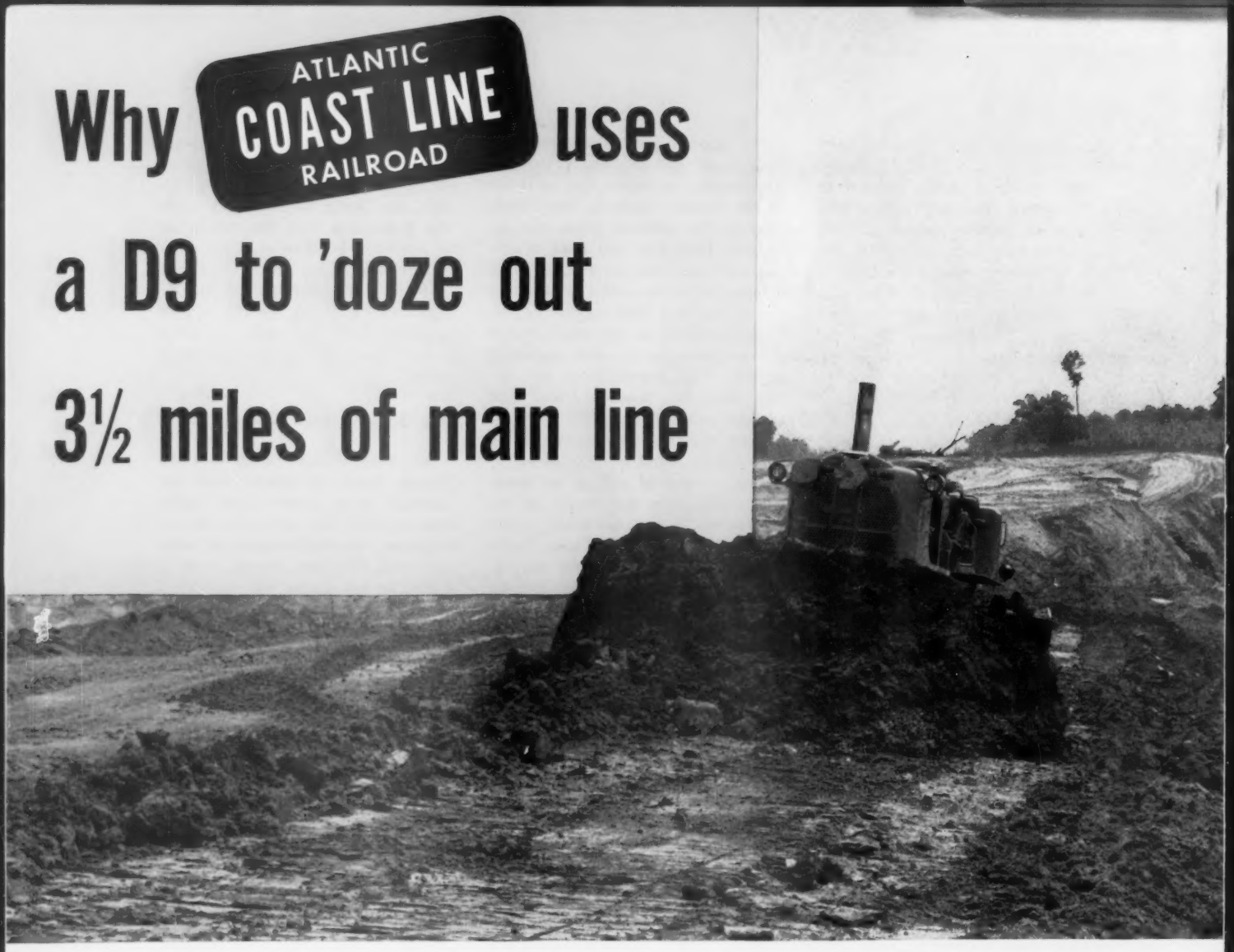
BETTER TERMINOLOGY—Bill Baird, PRR public relations manager at Pittsburgh, has a suggestion for improved terminology—a quest on which the Railroad Public Relations Association has embarked, as reported here a couple of weeks ago. The term he would like to have terminated is "No objection." He would substitute "Yes," if that's what's meant. Or, if the annotator is strongly in favor, it wouldn't hurt him to say: "Heartily endorse." Anyhow, Bill thinks we should "accent the positive" in our communication.

Railroad terminology is not, of course, uniform throughout the country. For example, on the Pennsylvania a caboose is a "cabin car." Are there other railroads which have their own terminology for common things and events?

NEEDLING THE RAILROADS—Somebody's always trying to get me gloomy, by pointing out some deficiency in railroad service, especially passenger service. For instance, I've received a clipping from the June 21 issue of Sales Management magazine which tells about an airline apologizing to its passengers for putting them on a DC6B plane, when a DC7 was shown in the printed timetable.

The scribe asked if anybody ever remembered getting an apology from a railroad when old equipment was substituted for the newer cars ordinarily used. It would be easy enough to kiss this critic off by telling him that, maybe, railroads would be more attentive to the passenger business if they were making net earnings out of it, as the airlines are (thanks in large measure to governmental favors). But I wonder if that's really a complete answer.

Why ATLANTIC COAST LINE RAILROAD uses a D9 to 'doze out 3½ miles of main line



For the big jobs, Atlantic Coast Line Railroad turns to one of its CAT* D9 Tractors to speed production, cut costs. The road has two of these giants. Here the D9 is grading a 60-foot fill, 1200 feet long, near Halifax, N. C.

No railroad construction job is too big for the giant D9. Equipped with a No. 9A Bulldozer, it can handle more than 10 cubic yards per pass. On a 50-foot haul, the big unit can handle 610 loose cubic yards per hour. And this figure can be increased as much as 75% on downhill 'dozing. Yet with hydraulic boosters which provide power for steering, braking and master clutches, it handles with small tractor ease.

And here is important news for railroads. Now you get even greater production from the Caterpillar D9 Tractor. Its Turbocharged engine output has been increased to 320 HP at the flywheel. And it's easy to service major components. Oil clutch or torque converter, transmission and steering clutches can be removed individually.

The D9 is a special favorite with operators. They like its "in-seat" starting, constant power drive for cable and hydraulic controls and excellent visibility.

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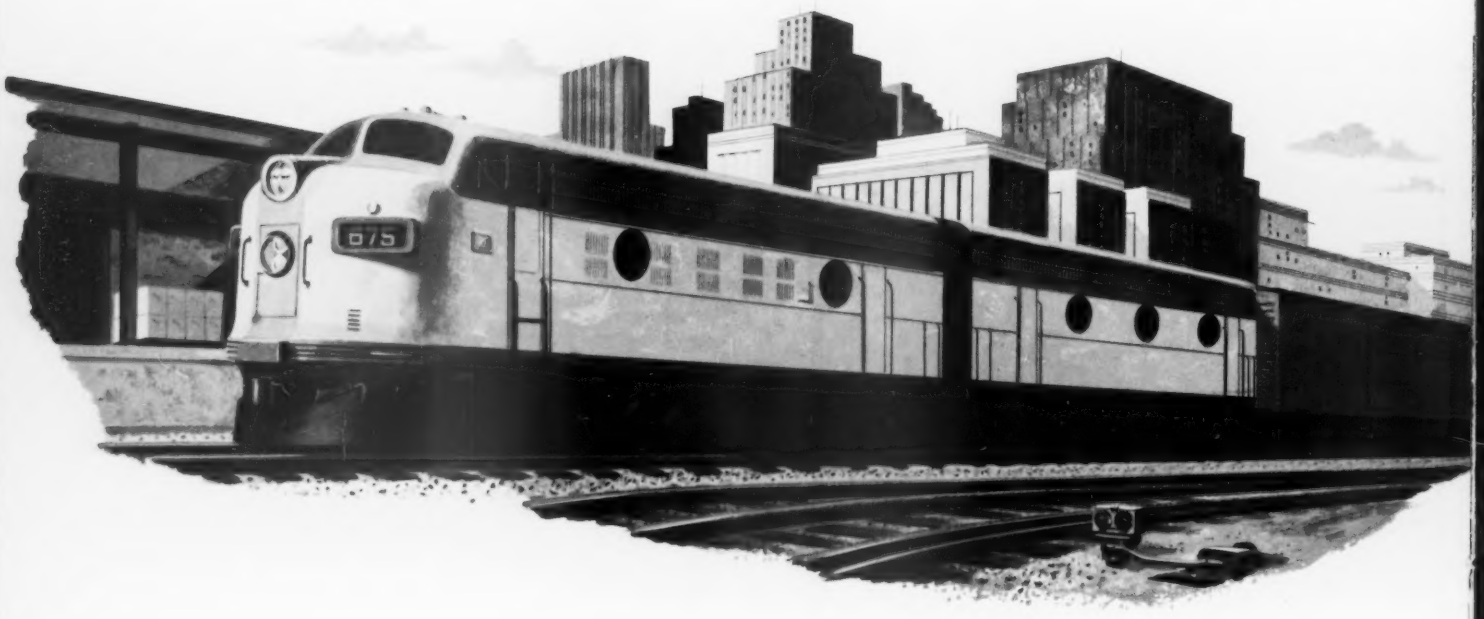

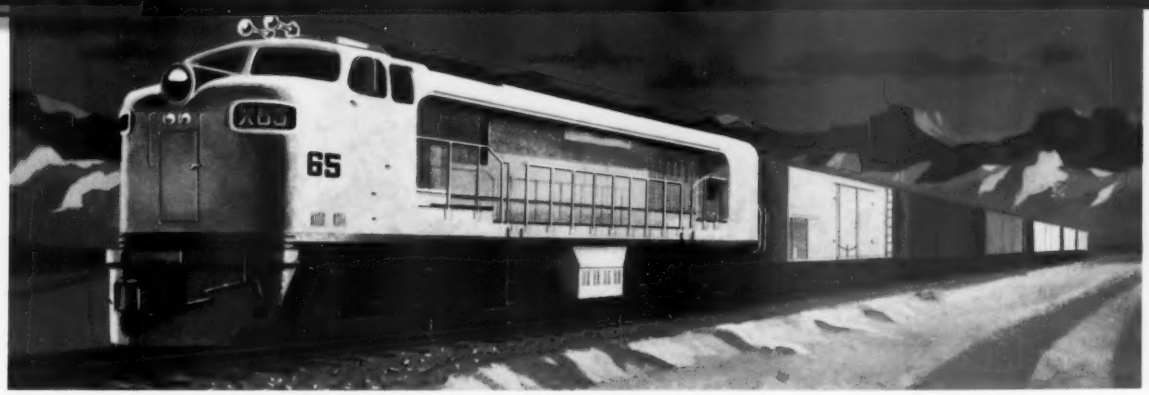

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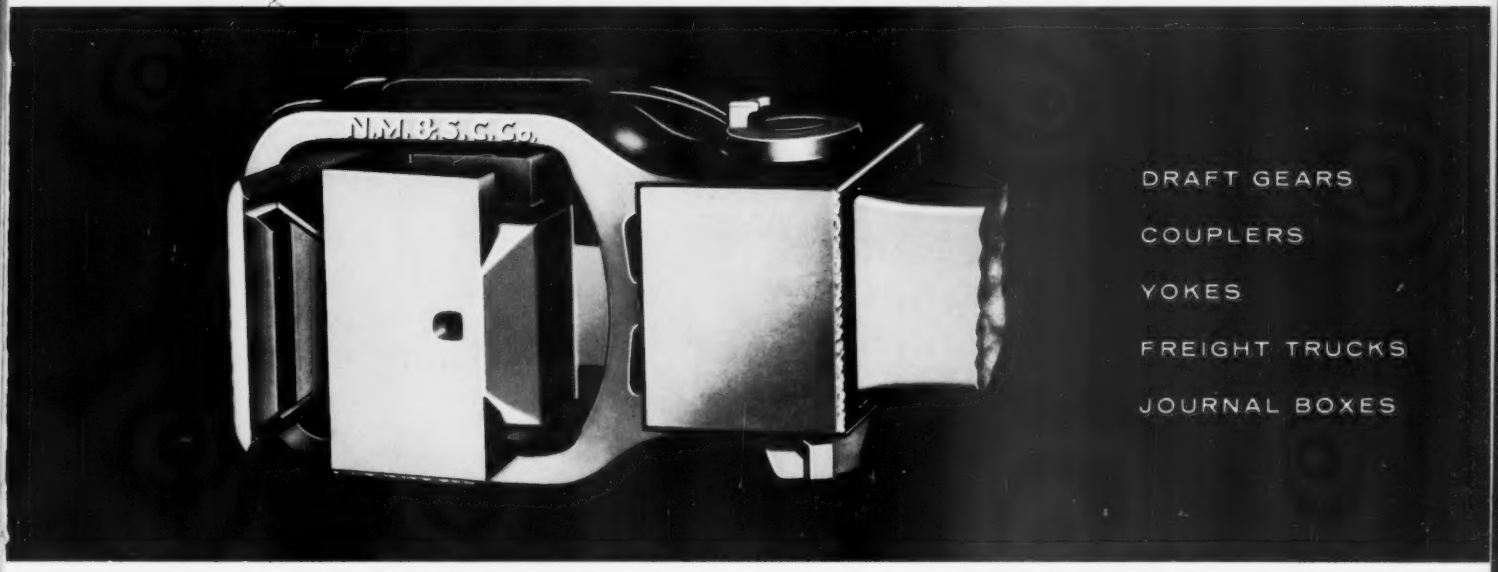

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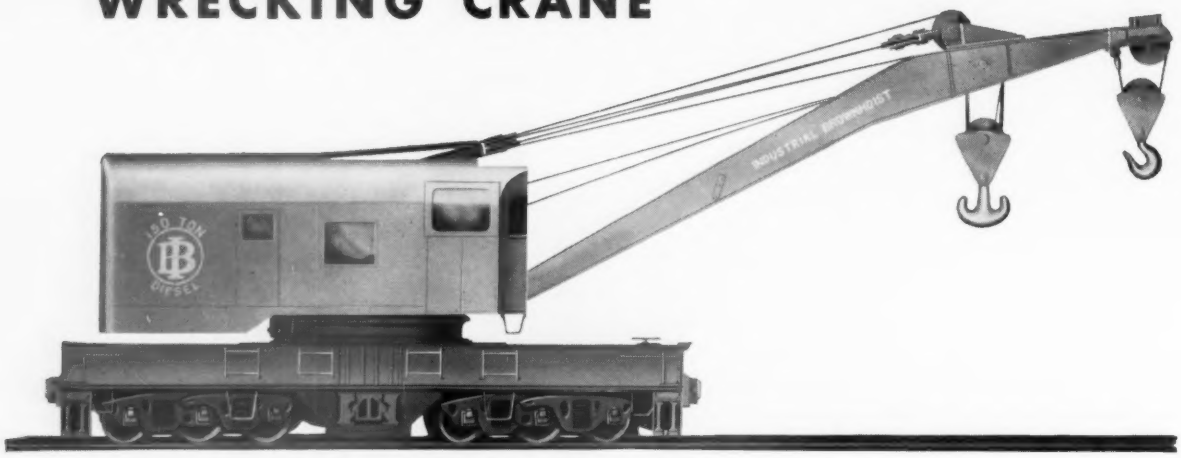

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INDEX

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2. box cars
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3. bulkhead flatcars
   pulpwood cars
   piggy back cars
   UNDERFRAMES, BULKHEADS
4. gondolas
   UNDERFRAMES, SIDE ASSEMBLIES, FLOORS
5. hopper cars
   UNDERFRAMES, SIDE ASSEMBLIES, HOPPERS
6. refrigerator cars
   UNDERFRAMES, SIDE ASSEMBLIES, DOORS
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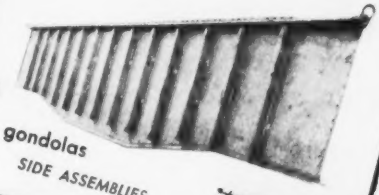

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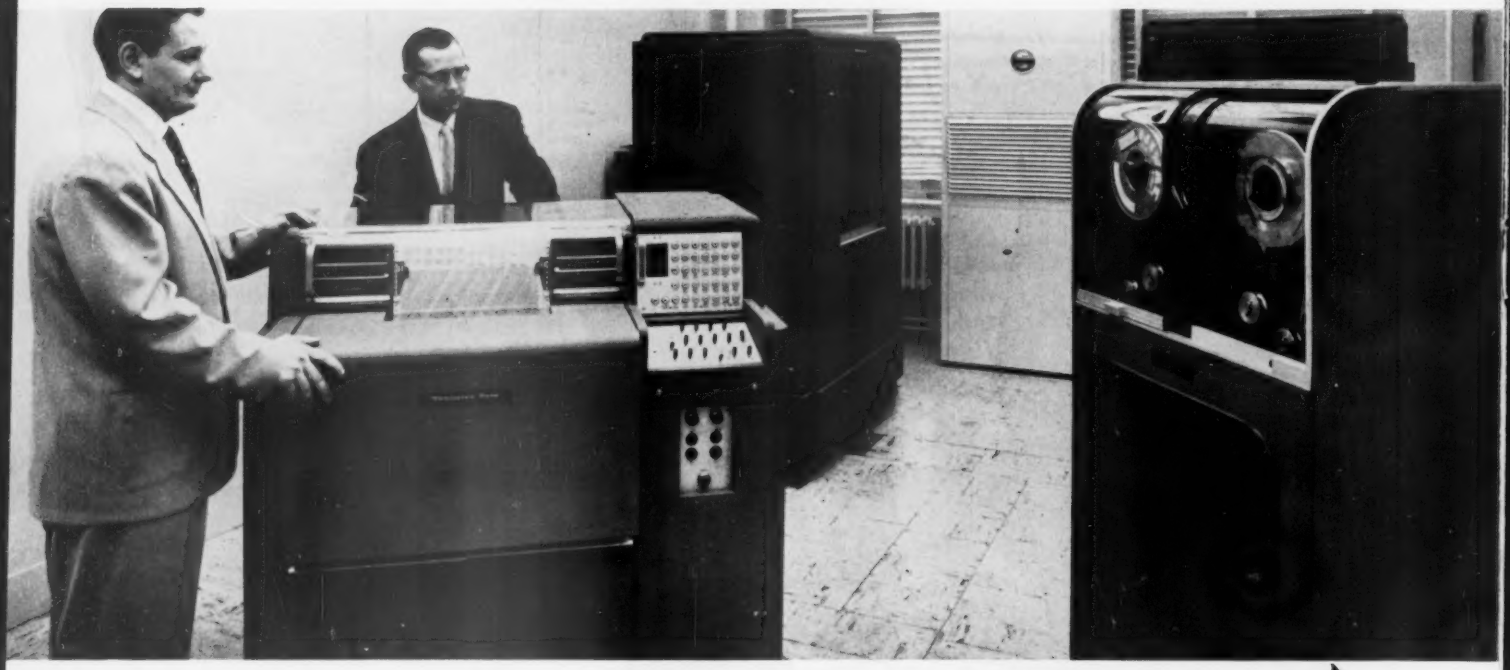
C&O STEPS UP TEMPO . . .

First RR 'Brain' Begins to Hum

The "one shot paperwork" concept is being broadened. Programs for inventory control and traffic statistics are being set up, along with a unique rail wear study. Labor negotiations largely have governed progress in effecting new programs.

When the C&O broke the news three years ago that it was going to be the first railroad to equip itself with one of the "giant brains" being introduced to American business, skeptics questioned the move as being premature. But the C&O, bulwarked by the findings of a methods research team, went ahead with its plans as a trailblazer for the railroads. Now, its "Univac" is on board and earning its keep—or very nearly so. Things have had to move slowly because of technical and personnel reasons—and because one just doesn't set up a full scale computer operation overnight.

Now there's definite acceleration. The switch is from standard tabulating practices to lightning calculations and introducing some jobs that could not have been done without the computer.



HIGH SPEED PRINTER operates under instructions from tape mounted in console at right.

CONSOLE provides operator with information on how program is proceeding, is point at which instructions are read into computer supplementing magnetic tapes.

TAPE STORAGE is maintained in this library where reels are segregated according to use, being marked as to date for eventual eradication of code and reuse.

On January 1 this year, newspaper editors throughout the country were startled to receive a review of the Chesapeake & Ohio's 1956 financial operations in a capsule annual report.

On March 15, C&O employees got a new type paycheck.

Sometime soon the railroad's purchasing department will be getting a new kind of inventory report tied in with data as to when specific items will have to be reordered.

Not long after that, maintenance personnel will start a new system of track replacement based on calculated, rather than observed, determinations of when rail is inadequate for particular traffic conditions.

Eventually, car distribution work will be computed with irrefutable logic rather than "figgered" off the seat of someone's pants.

All this is the output of the C&O's data processing center at Cleveland. Heart as well as brain of the center is a Remington Rand Univac, the first that was installed on any railroad in the country.

Projected is a complete freight revenue accounting job with interline apportionment and new traffic reports. Car accounting is being developed with private line settlements virtually set.

Predicting equipment needs and optimizing train and power use by advance scheduling are among other jobs coming up.

The traditional railroad office with rows of desk-chored clerks bent over their work is giving way to the air conditioned computer center. Typically, it's an attractive space crammed with cabinets of whirling tape reels, sparkling control consoles, and huge panels of electronic gadgetry seeming to be idle except for the pulsing "neons" and the varying brilliance of countless vacuum tubes—the whole permeated by a queer, dusty smell like the back of an old radio.

This is a railroad still dependent on the human decision. But its men will be counseled, as they now are on

NEW PAYCHECK, photostated here, is produced directly from high speed printer.

COMPUTER CENTER at Cleveland is shown with console in foreground, bank of magnetic tape units at rear and main unit of computer at left.

the C&O and a few other roads, by virtually limitless stores of crucially accurate information available to them when they need it.

"We're not thinking in terms of 'Has this computer justified itself?' " C&O Comptroller R. F. Brown told Railway Age recently. "The question is one of 'How many more do we want?' "

Picking up the conversation, H. N. Laden, computer research chief for the road, interjected: "What's next? We know there'll be even bigger computers."

"And we know," Mr. Brown continued, perhaps thinking of possible car distribution work at the road's communications hub at Huntington, W. Va., "that we don't want them all in one place."

Between them, these C&O officers indicated they didn't know now exactly what they will want from machines they may order subsequently. They would consider a more advanced model of the Univac they have but they also want to know if they'd be served just as well for the work to be done by a smaller, less expensive device with a more limited capacity for work and flexibility.

These decisions are to be made partly on the strength of present experience with the computer now in use, partly according to the nature of the projects undertaken. It's felt that the computer center is located ideally for its main purpose, advice to top management, but other machines probably would be located elsewhere, as in the car distribution function, more proximate to the related activities.

This looking-ahead to other computers confirms that the C&O management is not only sure it was right going after the first "giant brain" available to an American railroad, but that it is convinced it must tie much of its future to such devices of advanced automation.

The C&O Univac role to date has been summed up by the slogan "one shot paperwork," but high-level planning on the road goes far past that.

The road set out originally to cut down the duplication and multiplication of the millions of pieces of paper fluttering endlessly throughout its offices. This was an immediate and foreseeable objective; the Univac would simplify the road's statistical and record-keeping work, making it more efficient and more usable. Dollar savings were confidently anticipated.

Fast and Concise

Additionally, the opportunity to provide management with more varied and more concisely digested information—faster—is wrapped up in the C&O computerization concept. Thus, in a very real sense, the computer is thought of not only as a money-saver but as a money-maker in the form of a vital management tool.

A. F. Dell Isola, recently elevated to treasurer of the C&O, once said that long before a decision was finally made to get a computer, it was realized that the device couldn't help paying for itself.

"The real question," he stated, "was, rather, 'Where is the break-even point?' Putting it another way," he continued, "the real question to be answered was how soon we could justify getting a computer. Our job as we saw it was to determine how much we needed to incorporate in an initial computer operation so that we wouldn't lose money having a computer on the premises while readying other problem areas for computer application."

Three programs are now on the Univac: stockholder reports, dividend payments and payroll. Many others are pending introduction very soon, some already having been thoroughly tested in parallel trial runs.

Each program installed on the computer, however, is subject to bargaining under the C&O's labor agreements with the Brotherhood of Railway Clerks. The process of working out new agreements governing switches from older operations to the mechanized processes on Univac is not and has not been a speedy one.

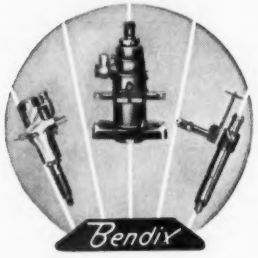
For example, parallel runs—comparing the new system with the old—began on the payroll operation in April 1956, were later discontinued, resumed and halted again. Negotiations involving who would be transferred and who would be furloughed, who would operate the computer's several component units, dragged through a full year of obstinate and trying give-and-take. On company estimates, 40 persons were to lose their jobs when the road's entire payroll was transferred to the Univac.

On the other hand, the dividend job was actually "new work" for the railroad's employees, formerly having been contracted out. This plus the ease with which the work could be programmed for Univac encouraged the road to make this its first computer assignment.

The payroll process first started out as a gross-to-net operation. It's now been extended to include computation of gross pay as well, using the ubiquitous punched card as the source document. Cards, containing individual job performance data, are mailed into Cleveland from district offices—the road's Transceiver network being called on for last-minute relay of information and, conceivably, where a bad break in the pay period on the calendar would require faster work. The cards are translated into magnetic tape which is then fed

(*Continued on page* 56)

A COAST TO COAST SERVICE ORGANIZATION FOR BENDIX DIESEL FUEL INJECTION EQUIPMENT



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BOOKS

BULLETIN NO. 96. 98 pages, illustrations. Railway & Locomotive Historical Society, Baker Library, Harvard Business School, Boston. $2 to members; $3 to non-members.

Gilbert Kneiss, telling of a strange incident the day after "Pearl Harbor," also presents the history of the Oahu Railway. Charles F. H. Allen contributes an article on the Pittsburgh, Shawmut & Northern and all associated and predecessor roads; Howard F. Greene and C. C. Edmiston contributes one on the Beech Creek; and Paul T. Warner, one on the eight-wheelers between New York and Philadelphia. The story of the Pittsburgh, Westmoreland & Somerset is written by Franklin J. Langsdale. Charles E. Fisher, editor of the bulletin, contributes a brief piece on the Cincinnati, Hamilton & Dayton. The concluding article is a short one on Baltimore & Ohio renumbering.

•

SHORESIDE FACILITIES FOR TRAILERSHIP, TRAINSHIP, AND CONTAINERSHIP SERVICES. 54 pages. Drawings. A study by Tippetts-Abbett-McCarthy-Stratton, prepared for the Maritime Administration, U.S. Department of Commerce. Distributed by the Office of Technical Services, U.S. Department of Commerce, Washington 25, D.C. $2.

This report presents technical analyses, function requirements, and criteria for planning shoreside facilities for "roll-on roll-off," "lift-on lift-off," and conveyor-type terminal operations. It presents also an analysis of the feasibility of combining several such operations at a terminal, and of adapting a conventional cargo terminal for joint use of both conventional and specialized shipping lines.

FILMS

SAN FRANCISCO. 16-mm., 30-min., sound, color film, Santa Fe Railway, Film Bureau, 80 E. Jackson Blvd., Chicago 4, Ill., or nearest Santa Fe agent. Free.

Depicts San Francisco as seen through the eyes of a captain of one of a fleet of tugboats Santa Fe operates in San Francisco Bay. As the captain steers his freight load through the Bay, he relates the history of the growth of San Francisco. The city's waterfront, unique topography, fog, Chinatown, and colorful night life are also part of the story. The film has been cleared for television public service showing.

PAMPHLETS

HIGHWAY TRANSPORTATION BARRIERS IN 20 STATES. 40 pages, drawings, tables. Marketing Research Report No. 157. U.S. Department of Agriculture, Agricultural Marketing Service, Washington, D.C. Available from Government Printing Office, Washington 25, D.C. 25¢.

The analysis presented here (for 19 states and the District of Columbia), is the first part of a comprehensive study. Comparable information on the remaining 29 states will appear subsequently. It is planned that the study's third and final report will analyze intensively the economic and related consequences of the size and weight limits and of third-structure taxes, with the analysis to be based on field studies. The present analysis—of the limits and taxes themselves—was undertaken as necessary groundwork for the field studies.

•

SOME EFFECTS OF LABOR COSTS UPON THE RAILROAD INDUSTRY, by Morris A. Horowitz. Labor Law Journal, February 1957. Reprinted by Bureau of Business and Economic Research, Northeastern University, Boston. Single copies available without charge; quantity prices quoted on request.

In recent years, Mr. Horowitz says, average earnings of railroad employees did not increase as much, percentagewise, as those of employees in other occupations. Some classifications in the train and engine group did, however, exceed those of nonrailroaders. This paper charts the effect labor costs have had on operating railroads.

•

BIBLIOGRAPHY OF RAILROAD LITERATURE. 64 pages. Association of American Railroads, Transportation Bldg., Washington 6, D.C. Free.

This booklet, now in its sixth edition, is designed to answer many inquiries which are received by American railroads about railroad literature. It lists many of the best books and stories that have been written about railroads and railroad travel. Lists of railroad and travel periodicals, and company and railroad employee periodicals are included.

•

TRANSPORT DEVELOPMENT AND LOCOMOTIVE TECHNOLOGY IN THE SOVIET UNION, by James H. Blackman. 64 pages, tables, charts. Essays in Economics, No. 3, February 1957. Bureau of Business and Economic Research, University of South Carolina, Columbia, S.C.

Professor Blackman approaches the problem of emerging locomotive techniques in terms of the economic conditions and potentials of a single country, namely the USSR. Reference is made to analogous postwar trends in the United States, although no systematic comparative study is attempted. His primary object is to explain the development of diesel and electric traction on the Soviet railroad network in terms of growth of the Soviet economy, and the concomitant expansion of its transport requirements.

The opening sections deal with the role of technology and the guiding imperatives of Soviet transport policy. Attention focuses next on the chief features of the transport system and the emerging structural trends. There follows a fairly detailed examination of the capabilities of the new types of motive power, leading to an assessment of their economic impact and the prospects for the future.

•

MONOPOLY POWER AS EXERCISED BY LABOR UNIONS. 31 pages. National Association of Manufacturers, 2 E. 48th st., New York 17. 25¢.

This report is the result of a year's study by a group of experts on labor-management problems. The group sought to determine, on the evidence of actual case histories, the extent to which United States labor unions hold and exercise monopolistic powers; also the circumstances under which such anti-social powers, which in other hands would be clearly illegal, are permitted to exist. The study group was organized at the suggestion of the NAM, but its research and deliberations were conducted and its report written on its own independent authority. Chairman of the group was Dr. Leo Wolman of Columbia University.

•

BLUE STREAK SERVICE. 30 pages. Copies available from G. W. Frink, general merchandise agent, St. Louis Southwestern Railway Lines, P.O. Box 959, Tyler, Texas. Free.

The Cotton Belt is distributing this loose leaf brochure which includes an alphabetical list of stations in Arizona, Arkansas, California, Louisiana, Missouri, New Mexico, Texas, also Memphis, Tenn., with blank space opposite each station for shippers and receivers to record whatever information they desire as to rates, routes, etc. Included are LCL schedules from and to stations served by the Cotton Belt, as well as piggyback schedules from St. Louis-East St. Louis to points in Arkansas, Louisiana and Texas served by StLSW-SP.

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MOTION PICTURES prepared and distributed by United States Steel Corp., Dept. RA, 525 William Penn Place, Pittsburgh 30. Free on loan.

A catalog describing educational and entertaining motion pictures sponsored and distributed by USS. It also contains information on how prints should be handled and conditions under which they are loaned. In addition to Pittsburgh, other USS film distribution centers are in Birmingham, Chicago, Cleveland, New York and San Francisco.

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IMPROVING HUMAN RELATIONS. 32 pages. Industrial Relations Division, National Association of Manufacturers, 2 E. 48th st., New York 17. 50¢.

This booklet explores some of the things top executives can do to improve human relations throughout all levels of an organization, with special emphasis on the part played by the supervisor on the plant floor.

ANNUALS

A YEAR BOOK OF JNR INFORMATION, 1956 Edition. 65 pages. Japanese National Railways, Marunouchi, Tokyo, Japan. Free.

TRANSPORT REVIEW AND OUTLOOK, YEAR END 1956. 20 pages. Transport and Communications Department, Chamber of Commerce of the United States, Washington, D.C.

BUS FACTS, 25th Edition, 1956. 72 pages. National Association of Motor Bus Operators, 839 17th st., N.W., Washington 6, D.C. Free.

MOTOR TRUCK FACTS, 1957 Edition. 56 pages. Automobile Manufacturers Association, New Center Bldg., Detroit 2. Free.

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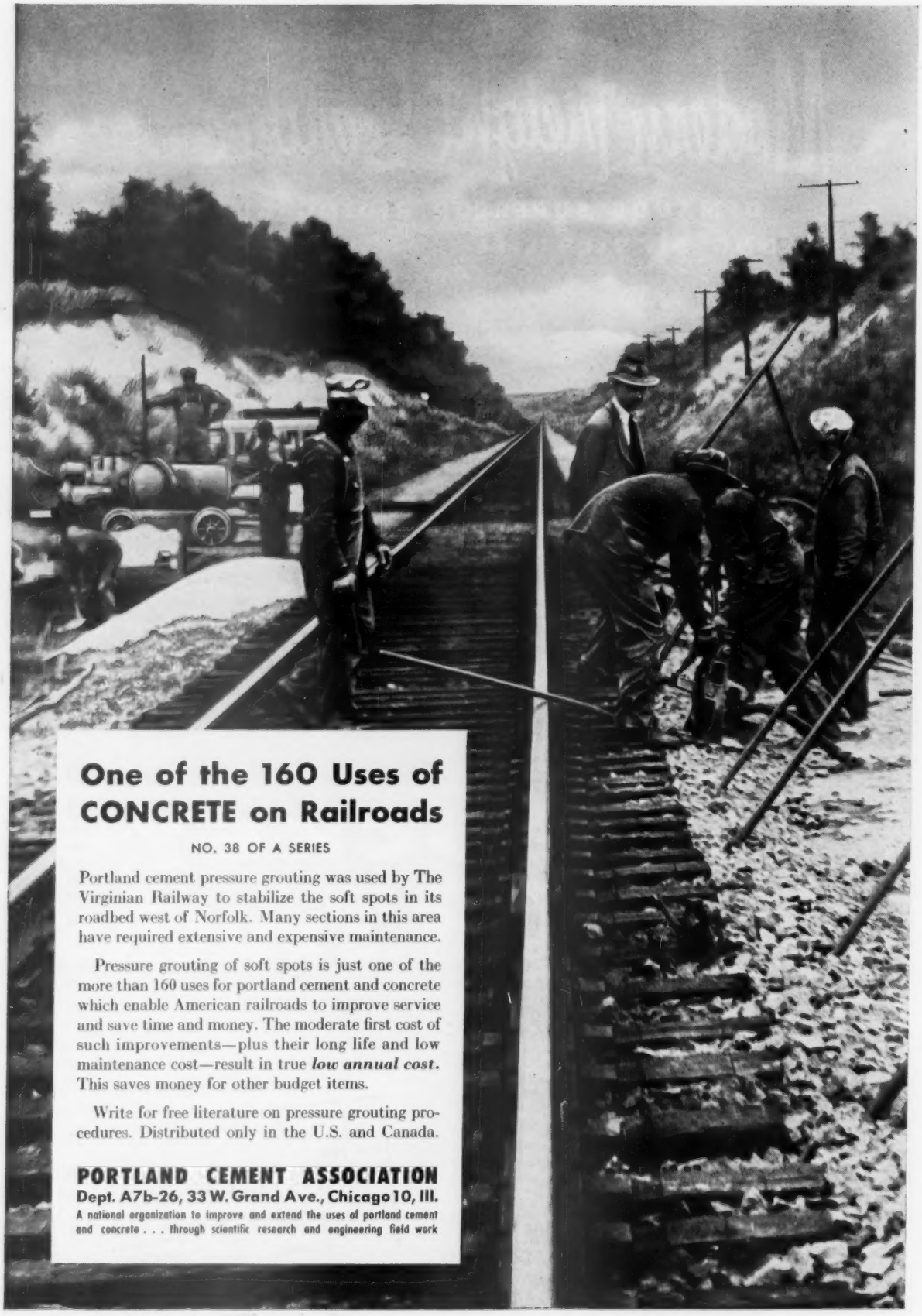

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BRING DAMAGE CLAIMS down

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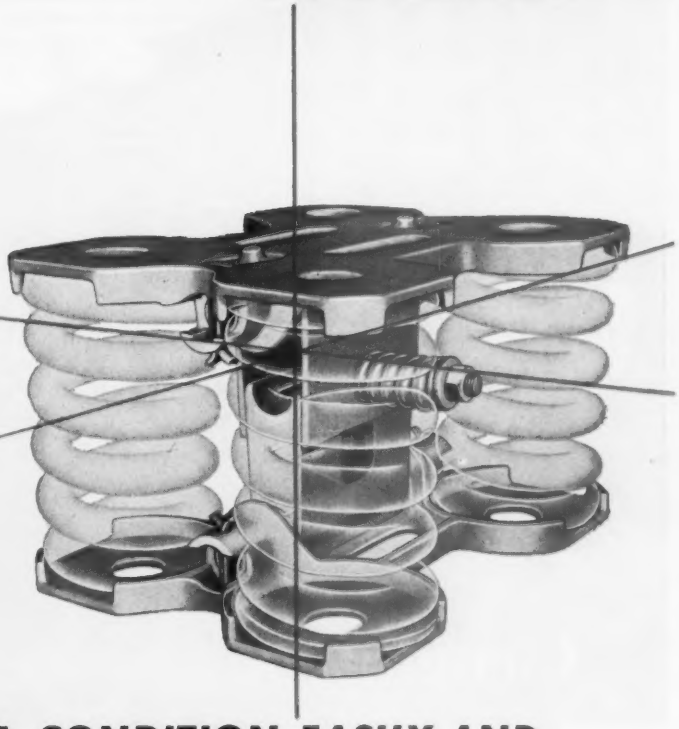

THE MAJORITY OF ALL DAMAGE CLAIMS ORIGINATE IN OLDER CARS

...A CONDITION EASILY AND INEXPENSIVELY CURED AT THE FIRST SHOPPING

Reduce equipment damage and freight damage claims immediately. No reduction in truck spring capacity. Large frictional area —long life. Spring travel 1⅝" to 2½". Working parts visible for inspection. *The older the car the more it needs snub-UP cushioning.*

SHIPPERS DON'T WANT DAMAGE CLAIMS...

THEY WANT SAFE DELIVERY!

RAILWAY TRUCK CORPORATION

R-2

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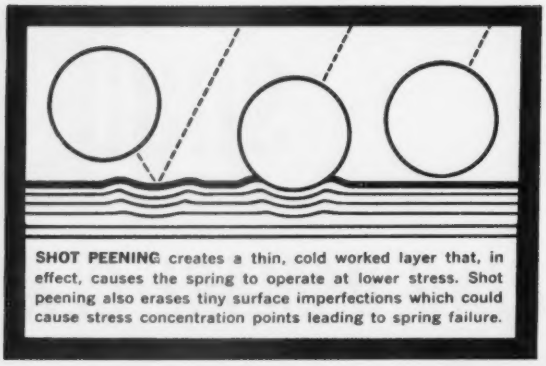
made stronger to last longer



SHOT PEENING creates a thin, cold worked layer that, in effect, causes the spring to operate at lower stress. Shot peening also erases tiny surface imperfections which could cause stress concentration points leading to spring failure.

cut bad-order car expense

You can help keep cars off the repair tracks with Crucible's *fatigue-resistant* springs. They're single heat treated and shot peened – *made stronger to last longer* – yet they cost no more than conventional springs.

Because they last longer, Crucible *fatigue-resistant* springs reduce replacements due to spring failures–90% of which are caused by permanent set.

Fatigue-resistant springs can maintain their load-carrying capacities over longer periods because they have better hardenability, higher elastic limits and greater resistance to working stresses. Crucible ensures these qualities in every spring through strict manufacturing control from ore through final, rigorous compression tests.

Crucible single heat treated *fatigue-resistant* springs are your best guarantee of low-cost, long-lasting spring performance. For details, write for folder: *Spring Division, Crucible Steel Company of America, McCandless Avenue, Pittsburgh 1, Pa.*

CRUCIBLE spring division

Crucible Steel Company of America

FRISCO LINES use Pittsburgh's New

HOT-SPRAY

ALKALI- AND ACID-RESISTANT VINYL

CARHIDE®

to Protect New Covered Hopper Cars!

One of the fleet of PS-2 covered hopper cars built by the Pullman-Standard Car Mfg., Company for the St. Louis-San Francisco Railroad, finished with Pittsburgh's new Hot-Spray Alkali- and Acid-Resistant Vinyl CARHIDE.

One coat of primer and one coat

of Vinyl finish applied hot puts cars into service more rapidly.

Now you get improved appearance and extra years of armor-like protection against corrosive cargos when you paint covered hopper cars with Pittsburgh's remarkable new Hot-Spray Alkali- and Acid-Resistant Vinyl CARHIDE.

This latest development in famous CARHIDE railway finishes gives you two-in-one efficiency —fortified protection and longer-wearing endurance with a single finish application. Hot-Spray AAR CARHIDE uses heat instead of thinners to control viscosity in periods of wide temperature variations.

Better working conditions result, because Hot-Spray AAR CARHIDE is applied with less air pressure, thus reducing "fog" or spray mist. It goes on more uniformly and has better adhesion. Because there is less thinner to evaporate, imperfections resulting from shrinkage are kept to a minimum. The final finish has higher gloss and is more durable, insuring longer-lasting protection.

Pittsburgh's AAR CARHIDE is not affected by such cargos as sulphur, soda ash, phosphates, lime, cement and most other corrosive materials. For additional information about this new finish which gets hopper cars into service more quickly and keeps them rolling longer, get in touch with Pittsburgh Plate Glass Company, Industrial Finishes Division, 1 Gateway Center, Pittsburgh, Pa.

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PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

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SURER, SAFER, SIMPLER CONTROL

give

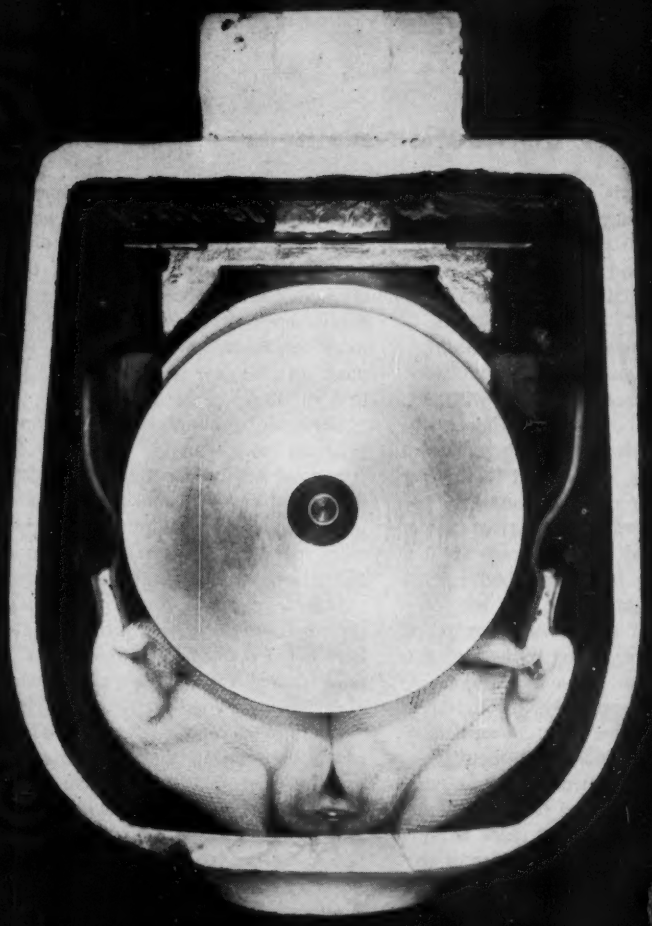
Positive Shift Prevention! Built-in fiber retainers prevent both endwise shift and shift from journal rotation. Pad resilience holds retainers against side of box, away from journal. One universal style for use in boxes with or without retaining ribs.

Far Better Wicking Action! New heavier cotton weave provides superior wicking action. Cover is woven as a single tube, eliminating all possible seams from the wicking path. The twin design also provides for equalization of the oil level in the journal box through a channel at the center.

Improved Resilience! Twin inserts are made of specially molded foam neoprene, compounded to our specifications. This provides excellent set resistance and oil absorption properties, and is designed for improved resilience.

Superior Oil Distribution! New twin design assures improved oil distribution along the entire length of the journal.

OF THE HOT BOX PROBLEM!



For boxes with or without retaining ribs, fiber plates integral with the new Redipak twin pads engage the stop columns, preventing both endwise and rotational shifting.

COMPARE THESE FEATURES OF REDIPAK TWIN PADS

Permanent size marking
Built-in universal retainers
Grommet at each end for easy removal
Channel between twin lubricating pads assures improved oil distribution along entire journal
One piece cotton wicking cover on special foam neoprene cores

Here it is . . . the new, improved Redipak twin lubricating pad! This latest triumph of American Brake Shoe's bearing research retains the simplicity, economy, and durability of the original model—yet achieves new standards of dependable, all-year-round lubrication!

This new Redipak twin lubricating pad is even easier to install, too. Sturdy fiber retainers keep it securely in position . . . whether or not the box is equipped with retaining ribs.

Try out this new Redipak twin lubricating pad and see for yourself how it improves lubrication!

AMERICAN **Brake Shoe** COMPANY

RAILROAD PRODUCTS DIVISION

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Questions and Answers

Of current interest to the Transportation Department

Can anything be done to bring about better utilization of the freight car fleet, particularly the general purpose box car . . .

?

Yes. Better distribution methods will help.

This subject is receiving much attention these days. For example, a two-day (April) meeting of the Railway Systems and Procedures Association was devoted entirely to the subject.

In hand now are the proceedings of the RSPA meeting. Anyone interested in better car utilization will find this volume thought-provoking reading. Not the least interesting feature of the meeting, for me, at least, was the wide range of means brought forward to achieve the objective. Some of the formal presentations at the meeting have been described briefly in Railway Age.

It's true, of course, that for years railroads have been trying to get local forces to do a better job of handling cars properly, through observing car service rules. Nevertheless, many top transportation men have felt that only when a means was found to charge local forces with the cost of car delay would there be any appreciable improvement. One of the first attempts to do this on a continuing basis was made by the Canadian Pacific, and described in Railway Age, Sept. 21, 1953, p. 92.

Now *George Leilich,* operating vice-president of the Western Maryland, has taken another step, i.e., charging local forces with car delay costs.

Readers of Railway Age have seen (Apr. 8, p. 34), a description of the Southern Pacific's new method for distributing empty general purpose box cars among the divisions of the railroad. The RSPA proceedings describe this system in detail and also report the question and answers which followed the presentation of the SP technique at the meeting.

Several points brought out in the question and answer session are significant. For one thing, orders from San Francisco to the division offices contemplate activity for a week. Thus division A will be told to deliver to division B during the succeeding week 500 cars. Once these cars reach division B it is the responsibility of the division car distributor to place the cars where he needs them. Thus, the local forces still are responsible for most of the car distribution tasks they've always performed.

Better distribution systems and any program which makes local forces conscious of the costs of car delay undoubtedly will do much to improve utilization of general purpose equipment (particularly). But these are not the only bases to be touched.

If you read our story of the SP's new distribution system you undoubtedly noted that basic to the plan is a procedure for rough-grading of general purpose box cars. An RSPA "workshop" group, the proceedings note, is trying to make this rough-grading and marking system—and naturally, the standards by which such gradings are judged—common practice for all railroads. Note that this is *not* a system for commodity marking.

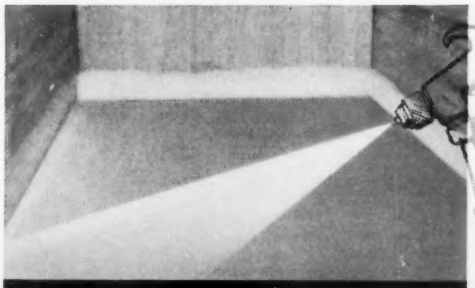
How will the grading plan benefit any given railroad or the industry as a whole? For one thing, as I see it, as cars move from road to road, once all roads are in the act, receiving roads will know what they have to work with. Thus, if 60 box cars are received in interchange, with perhaps 30 of them Class A or B, these cars can be sent to areas of need without further fuss. Thus, these high grade cars would not be quite as likely to be downgraded as they are today, by having placed in them a commodity which should be handled in a C or D car. (The same thing would apply, of course, where cars were being moved between terminals on one railroad.)

If prevention of this downgrading were the only thing accomplished, the system probably would be still worth while.—*G.C.R.*

CONDUCTED by G. C. RANDALL, district manager, Car Service Division (ret.), Association of American Railroads, this column runs in alternate weekly issues of this paper, and is devoted to authoritative answers to questions on transportation department matters. Questions on subjects concerning other departments will not be considered, unless they have a direct bearing on transportation functions. Readers are invited to submit questions, and, when so inclined, letters agreeing or disagreeing with our answers. Communications should be addressed to Question and Answer Editor, Railway Age, 30 Church Street, New York 7.

Upgrade any box car interior

BEFORE ▼ AFTER



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a tough, permanent plastic car liner

Exclusive ARMORTEX Process Eliminates Use of Expensive Mesh or Glass Fabrics

- **SMOOTH, TOUGH SURFACE—EASILY SWEPT OR WASHED OUT**
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Serving American Railroads Since 1895

Compare Costs, Materials and Application with Any Other Process

Here's really big news the whole railroad industry has been waiting for! Now, for the first time, it is possible to apply a quick, economical protective coating to box car floors and walls which insures the *permanent*, superior surface needed for shipment of high grade bulk commodities such as grits, flour, sugar and grain.

Armortex, an amazing new discovery of the J. W. Mortell Railroad Division, completely eliminates the costly preparation of cars for individual loadings. Internal car surfaces coated with Armortex no longer splinter or deteriorate under normal operating conditions...thus resulting in a reduction of claims due to leakage, infestations, package damage.

Still another big advantage of new Armortex is its ease of application. One man can cover a box car floor in less than 30 minutes...readying the car for service the next day. By spraying, brushing or troweling, Armortex can be applied at any shop, rip-track or siding without returning the car to a central maintenance location.

Armortex is also available in Caulking Grade for sealing in large cracks and gouged-out surfaces in lining, doorposts, etc.

Being interviewed is E. A. Wagner, Product Engineer

"This oxide blend packs more power per ounce"

At the Exide Laboratories—

Reporter: More power, Mr. Wagner? Do you mean the blend of oxides in Exide-Ironclad is different from that used in other batteries?

Wagner: Absolutely. We can use the more active oxides that give the batteries higher capacity.

Reporter: Why do you say *can?* Can't other batteries use these oxides too?

Wagner: It isn't likely. First, this blend is the result of more than 40 years of Exide research—and it's an Exide exclusive. Second, we can use it successfully because of the unique tubular construction of the Exide-Ironclad positive plate.

Reporter: How does tubular construction help make it a better battery?

Wagner: Because the cylindrical power tubes hold the tiny oxide particles firmly in electrical contact clear through the charge and discharge cycle. So Exide-Ironclad Batteries can maintain their high capacity—even under severe vibration—for years of service.

Reporter: Obviously, this is an important feature of Exide-Ironclad Batteries.

Wagner: Yes it is, but it's just one of many engineering details that contribute to its high capacity and long life.

Note to battery users: Whenever you order heavy duty batteries or the equipment that requires them, be sure to specify Exide-Ironclad. For bulletin, write Exide Industrial Division, The Electric Storage Battery Co., Philadelphia 2, Pa.

Battery for railway car lighting and air conditioning. Model EHL. Write for Bulletin No. 5168.

Battery for railway diesel starting. Exide-Ironclad Model MVD. Write for Bulletin No. 5348.

Exide®

THE ELECTRIC STORAGE BATTERY COMPANY

VAPOR'S CABAN HEATER IS POPULAR ALL ALONG THE LINE

Popular with operating officers who like it for its low cost per month of use and because it's a pleasure and a comfort to all crews.

Popular with mechanical officers who like it because its very rugged construction makes it positively trouble-free.

Popular with storekeepers because it burns available fuels—Standard No. 2 Diesel Fuel, Kerosene or No. 1 Fuel Oil. Simplifies stocking of heaters (one type for many uses).

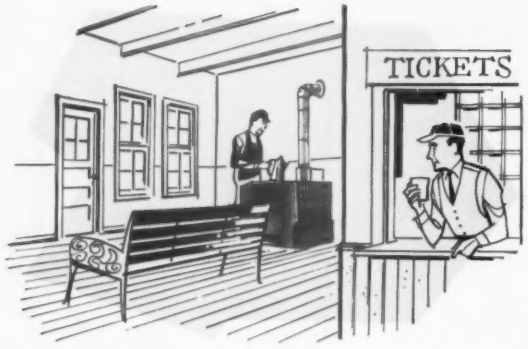
Popular with Purchasing Agents because they know this single type of heater, from so reliable a source, fills so many needs.

Popular with caboose-car builders because the Vapor Caban is so easy to install—so satisfactory in service.

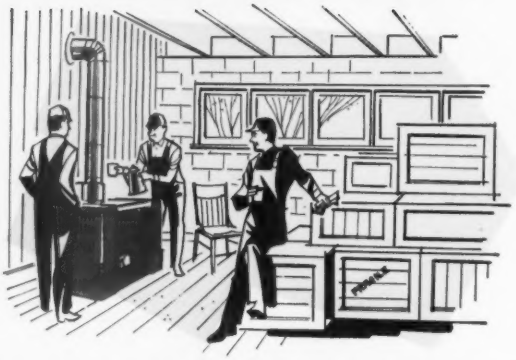
Popular with all of YOU when you find how little it costs to put 55,000 BTU/hour heat anywhere along the line.

Freight crews like the way Caban pours out heat no matter how severe the coupling or starting shocks—the steady, clean flame at any running speed and on curves—the firm, rigid anchoring—the convenient cooking-stove top that has hot caboose meals and coffee ready quickly.

Construction crews like Caban's chill-chasing, clothes-drying radiant heat—appreciate convective heating that warms every part of the camp car. And they particularly like the way Caban keeps the car warm all day but is easily regulated down to comfortable sleeping temperatures.



Station agents like the way Caban keeps stations clean and warm, and they like knowing it won't go out during "closed" hours. In small stations, Caban's optional water heater makes it doubly convenient.



Warehouse men like the way Caban keeps small storehouses warm even if unattended for days at a time—the quick heat-up after an easy start in buildings that don't have to be kept warm all the time.

Find out about Caban—write for Bulletin 441

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MARKET OUTLOOK THIS WEEK

Freight Car Loadings

Loadings of revenue freight in the week ended June 29 were not available as this issue of Railway Age went to press.

Loadings of revenue freight for the week ended June 22 totaled 746,764 cars; the summary, compiled by the Car Service Division, Association of American Railroads, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, June 22

District	1957	1956	1955
Eastern	116,631	123,898	130,853
Allegheny	145,698	157,890	154,449
Pocahontas	68,150	65,006	59,896
Southern	123,202	127,756	122,500
Northwestern	120,643	127,844	132,781
Central Western	119,473	133,519	131,905
Southwestern	52,967	63,679	62,043
Total Western Districts	293,083	325,042	326,729
Total All Roads	746,764	799,592	794,427
Commodities:			
Grain and grain products	48,347	61,697	58,220
Livestock	4,490	6,055	5,525
Coal	144,430	143,165	130,303
Coke	10,805	12,190	11,771
Forest Products	42,505	48,101	48,201
Ore	88,628	87,726	87,579
Merchandise l.c.l.	53,513	58,960	67,593
Miscellaneous	354,046	381,698	385,235
June 22	746,764	799,592	794,427
June 15	746,125	801,428	779,957
June 8	733,477	787,075	781,938
June 1	671785	791,209	709,351
May 25	722,903	788,254	785,589
Cumulative total, 25 weeks	17,109,161	18,173,767	17,184,253

IN CANADA—Carloadings for the seven-day period ended June 14 totaled 83,697 cars, compared with 85,827 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
June 14, 1957	83,697	31,984
June 14, 1956	93,862	32,995
Cumulative Totals:		
June 14, 1957	1,756,576	773,856
June 14, 1956	1,889,522	814,599

New Equipment

LOCOMOTIVES

► *Burlington.*—Ordered 30 1,750-hp SD-9 road-switchers, Electro-Motive; delivery scheduled for August-September-October.

► *India.*—Two of this country's steel companies ordered 29 broad-gage (66-in.) industrial diesel units from General Electric at cost of $2,100,000; Hindustan Steel Company purchased 10 80-ton, 10 35-ton and four 150-ton units, and India Iron & Steel bought three 80-ton and two 35-ton units.

► *Turkey.*—Purchased five 1,980-hp standard-gage diesel units from Pan American Investment, Inc.; delivery of units, to be built by General Electric, will start this year; order, initial part of program to modernize Turkish State Railways, is expected to be followed within next few years by purchase of 85 additional units.

PASSENGER-TRAIN CARS

► *Union Pacific-Wabash.*—Ordered 6 Astradome coaches for "City of St. Louis," between St. Louis and Los Angeles; cars will be built by Pullman-Standard; UP will buy 5 coaches, Wabash 1; delivery expected to start second quarter 1958.

FREIGHT-TRAIN CARS

► *Pittsburgh & Lake Erie.*—Ordered 2,000 hopper cars, Despatch Shops, Inc., at unit cost of $8,300, and 500 mill-type gondola cars, Greenville Steel Car, at unit cost of $10,500.

New Facilities

► *Canadian Pacific.*—Ordered switching and signaling apparatus from Union Switch & Signal-Division of WAB Co. for installation of CTC on 4-track interlocking at Ballantyne, Que.; interlocking control will be centered in type C control machine at Montreal West.

► *Houston Belt & Terminal.*—Will build 400-ft by 75-ft car-door-height warehouse at Houston at approximate cost of $175,000; warehouse will be used by a car forwarder.

► *Northern Pacific.*—Awarded contract to Bailey Construction Company, Billings, Mont., for construction of new passenger and freight station at Forsyth, Mont.; work to be completed by December 1; removal of existing buildings and laying of new track will be done by company forces.

► *St. Louis Southwestern.*—Will build electronic gravity yard in Pine Bluff, Ark., at estimated cost of $5,500,000; yard will have nine receiving and departure tracks, each with 140-car capacity; 28 classification tracks will be provided, with total capacity of 1,300 cars; allowance has been made to expand number of classification tracks to 40; part of yard will be in operation about December 1958, with completion expected by June 1959.

(*Continued from page* 10)

Pullman-Standard said at Chicago that it's still too early to tell the definite extent of its changed prices—but they will go up. How much, a spokesman said, depends on how much of the steel price hike is passed on to P-S, how much is absorbed by suppliers. The matter is covered in industry escalator clauses which, it's pointed out, could work in the opposite direction.

General American says that it will pass along most of the price rise via its escalator clauses with contract customers. Its prices will go up in proportion with the steel price rise, varying according to the steel tonnage used in particular products, a spokesman said.

A Standard Railway Equipment spokesman, however, said that the volume of the year's business was such that the company feels it "should and will absorb" at least some of the higher steel price. He said the company will do its "utmost" to hold the line on its prices although the full effect of the steel price rise cannot yet be evaluated.

PRR, NYC Work to Fix Flood Damage

Storms spawned by the summer's first hurricane swept through the midwest a week ago, battering the Pennsylvania and the New York Central and doing lesser damage farther south to the Missouri Pacific and the St. Louis-San Francisco.

The storm, bringing nine inches of rain to southern Indiana and Illinois, resulted in four breaks in the PRR mainline to St. Louis and put two branches (Peoria and Crawfordsville) out of service. The NYC had a bridge out on its mainline near Shelbyville, Ill., but expected to have the span back in service soon.

Some 700 maintenance-of-way employees, 10 work trains, four pile drivers and even divers were thrown into Pennsy's struggle to repair its lines. The trouble included:

—Reelsville, Ind.: 110-ft single-track steel span bridge collapsed while cinder train was crossing; locomotive and one car made the west end of the bridge. Cabin car remained on the east side, 18 cars plunged into the creek.

—Liggett, Ind.: Washout, 20-ft deep, 1,500-ft long.

—Marshall, Ill.: Fill at east end of bridge washed out, 100-ft deep; PRR using old shop cars as base in effort to get new fill to hold.

—Martinsville, Ill.: Washout, 9-ft deep, 1,500-ft long.

By midweek, slow-speed service was restored at Liggett and Martinsville; a temporary span will be installed at Reelsville; and while repair work continued, PRR had divers at work checking damage to other bridge abutments. The loss, including repair costs, increased expenses of rerouting trains and loss of revenue, may hit $1 million. At last report, passenger trains of both the Pennsy and the NYC were using a detour over Illinois Central tracks between Effingham and Matoon, Ill.

Mopac and Frisco both had washout troubles south of St. Louis, but both were back to normal operation early in the week.

75% Cut in Loading Time Claimed for New Truck

This radically new type of truck featuring an elevator-like body was demonstrated recently in New York City by the Railway Express Agency. The builders, Thompson Trailer Corporation, Pikesville, Md., claim the unit can reduce street loading time of conventional commercial vehicles of rigid heights by as much as 75%. Saving of up to 40,000 lb of manual effort per loading also is claimed for the 16-ft, 5-ton capacity truck, called the "Lo-Loader." Body of the truck can be lowered in 12 seconds to ground level from its normal driving position. With the entire body resting on the street, easy and uninterrupted "walk in" sidewalk level loading is provided. With both side and rear roll-up doors, the truck body can be raised, lowered or tilted readily to conform to loading dock height.

L&N Probing Accident At Kentucky Crossing

Louisville & Nashville officers were continuing an investigation last week into a collision involving a freight train and the southbound "Dixieland," in which six persons were killed. The freight, traveling at a slow speed, struck the side of the passenger train at a crossing at Guthrie, Ky.

Crew members of the freight train were quoted as citing brake failure as the cause of the accident, but the railroad withheld comment pending completion of its investigation. The engineer of the freight and two members of the "Dixieland" dining car crew were listed among the dead.

The accident occurred at the point where the L&N's Evansville Division crosses its Memphis line.

Hammer Falls on O&W—Bids Total $10 Million

Up for review in Federal Court at New York City this week will be bids by railroads and others for the property of the now-defunct New York, Ontario & Western following recent public auction.

A total of $1,745,000 was bid for 16 road locomotives and 21 road switchers, all diesels. The Reconstruction Finance Corporation holds equipment trust certificates totaling $2,000,000 on the locomotives. A total of $8,286,820 was bid on the rest of the O&W property.

Receiver J. B. Kilsheimer said he would move for court confirmation of all the bids except those on the road's coal piers at West New York, N. J., and assorted road department and diesel parts for which he said inadequate bids had been received.

Among purchasers of the equipment were: the New York Central, 17 road switchers (which it has been operating under lease since soon after the O&W ceased operations March 29); the Erie, four road locomotives; and the Northern Pacific, one road switcher.

C&NW Expands Upgrading Program at 6.09% Rate

The highest equipment trust interest rate since last January has been accepted by the Chicago & North Western on a $2,250,000 issue. The road accepted a 6.09% net interest cost—only slightly below that paid by the Boston & Maine earlier in 1957 (Railway Age, Feb. 4, p. 44).

Involved in the issue is a continuation of C&NW's diesel upgrading program, which began last March with a $1,335,000 issue at a coupon rate of 5½%. (Railway Age, Mar. 18, p. 15).

The current C&NW project will upgrade 20 1,500-hp F-3 locomotives, with Electro-Motive Division taking in the F-3's and turning out 1,750-hp GP-9's. Deliveries are expected to start in mid-July and continue through January at a rate of about three a month. Twelve units were included in the first C&NW upgrading issue.

The six-per-cent-plus interest rate indicated that the high cost of money to the railroads is showing no signs of a downturn. Interest cost was a factor in programming the current C&NW project; but the road indicated that advantages to be gained by the upgrading outweighed the high cost—despite the fact that the GP-9's will be, in effect, replacements rather than additions to the motive-power roster.

BLE AND RAILROADS AGREE ON WAGE PACT

A wage settlement agreement has been reached by representatives of the Brotherhood of Locomotive Engineers and the nation's railroads. The settlement, according to the National Mediation Board, covers a three-year period, includes a cost-of-living escalator clause, and a three-year moratorium (effective Nov. 1, 1959), on wage increases or decreases.

The agreement provides for a 6% boost in the average basic daily wage rate, effective last November 1, and two additional increases of 3.5% effective, respectively, on Nov. 1, 1957, and Nov. 1, 1958. A paid holiday option is included. Next step will be submission of the agreement to the union's association of general chairmen.

11% REA Boost Not All It Seems

The "11%" increase granted to the Railway Express Agency in Eastern territory actually comes to substantially less than that, the REA holds.

Authorized by the ICC to boost its Eastern territory LCL rates 15% above the December 26, 1956 level, the agency winds up with no increase at all on some of its major shipments, and a maximum of just 10.6%, the REA said in a press release.

The ICC authorization, in effect, wiped out for Eastern territory a 4% rate boost authorized last December 27. Moreover, REA said, denial by the commission of fourth section relief means that rates between places in Eastern territory cannot exceed the rates betwen eastern cities and points immediately beyond Eastern territory.

So, in keeping with the ICC ruling, REA can't charge more for a shipment between New York and Chicago than it can between New York and Maywood, Ill., which is just over the territory boundary.

The New York-Chicago rates remain the same, therefore, REA reported. So do rates between Cincinnati and St. Louis, Boston and Evansville, Philadelphia and Richmond, and Pittsburgh and Pittsburgh and Peoria.

While New York-New England shipments, for example, would receive the full increase (being free of the territorial boundary snag), the 100-lb rate between New York and Louisville goes up only 2.7% and, on a New York-South Bend shipment, rises only 2.9%, REA said.

Because of the complexity of the situation created by the denial of fourth section relief, an REA spokesman said, it has been impossible to compute an average percentage increase or an estimate of total dollars the REA will get as a result of the increase. The increase was sought for the Eastern territory alone, it was explained, because of higher operating costs there.

ICC Defends Itself on Motor Mergers

The Interstate Commerce Commission last week struck back at a Congressional committee staff which criticized its performance as regulator of motor carriers.

The criticism was in a report by the staff of the Select Committee on Small Business. Generally, the report charged that commission determinations in motor carrier merger and new-service cases have fostered the development of big trucking companies at the expense of small ones.

The committee gave the commission an opportunity to comment on the report, and Chairman Owen Clarke did so in a July 1 appearance before the committee. He characterized the report generally as one which "contains numerous errors, contradictions, untenable assumptions, and erroneous conclusions."

He went on to point out that it set out a philosophy holding that the national policy with respect to motor transportation should be one of unrestricted competition. This completely overlooked the fact that Congress has not prescribed such a policy—"nor has it decreed that the motor carrier industry shall consist solely of 'small' carriers," Mr. Clarke added.

"We submit that the commission's efforts to carry out the national transportation policy . . . have contributed in a substantial way to the development of the motor carrier industry as a sound and efficient segment of our national economy. Its service is unsurpassed anywhere in the world. It is performed by private enterprise, operating at a profit and paying taxes. It embraces more effective competition than many regulated industries. It works."

NP Has New Phone System

President Robert S. Macfarlane places the first call over Northern Pacific's new 2,000-mile transcontinental dial telephone system. D. C. Hill, NP superintendent of communications, looks on. The automatic phone hookup links the road's St. Paul and Minneapolis offices with offices in Seattle, Tacoma and South Tacoma.

People in the News

ALASKA.—**J. Glen Cassity** named counsel of this road at Anchorage. Mr. Cassity was formerly with the Department of Agriculture, Washington, D. C.

ATLANTIC COAST LINE.—**C. E. Vick,** general industrial agent, Wilmington, N.C., appointed assistant to vice-president, traffic.

Norman C. Shephard, general attorney, Wilmington, N. C., appointed general solicitor. **Frank G. Kurka,** solicitor, named assistant general solicitor. **Leonard G. Anderson** and **John W. Weldon,** attorneys, appointed assistant general attorneys. **Phil C. Beverly** and **Albert B. Russ, Jr.,** named commerce attorneys. **James E. Williams** appointed attorney.

BALTIMORE & OHIO.—**R. W. Parr,** traveling freight agent, Newark, Ohio, named district freight agent, Buffalo, N. Y., succeeding **J. E. Parker,** appointed district freight representative, Atlanta.

W. D. Hunt, terminal trainmaster, East St. Louis, Ill., named trainmaster Connellsville, Pa., succeeding **J. L. Lowney,** retired.

R. J. Roeder, trainmaster, Newark, Ohio, promoted to superintendent, Indianapolis division, Indianapolis, Ind., succeeding **R. C. Diamond,** transferred to the Ohio division, Cincinnati, to replace the late **C. S. Darling.**

BANGOR & AROOSTOOK.—**Melvin E. Walls,** chief dispatcher, appointed trainmaster, North Maine Junction. **Leigh S. Milton,** assistant trainmaster, promoted to trainmaster, Houlton, Me.

BESSEMER & LAKE ERIE.—**Roy C. Beaver,** vice-president and general manager, Pittsburgh, Pa., retired June 30. **Robert D. Lake,** assistant general manager, promoted to general manager. A photograph of Mr. Lake was published in Railway Age, Jan. 28, p. 41.

BURLINGTON.—**J. E. Wolfe,** assistant vice-president—labor relations, Chicago, elected vice-president—personnel there.

A. C. Loyd, agricultural agent, Omaha, Neb., appointed industrial agent, Chicago. **James C. Kemp,** formerly assistant county agricultural agent for Weld County, Colo., named to succeed Mr. Loyd at Omaha.

CANADIAN NATIONAL.—**F. S. Barker,** assistant division engineer, Montreal Terminals and St. Jerome divisions, appointed division engineer of those divisions, Montreal, succeeding **H. J. Kay,** transferred. **R. C. Weller,** assistant division engineer, London, Ont., appointed division engineer, Hornepayne division, Hornepayne, Ont., succeeding **A. E. Sibbick,** transferred.

Edgar C. Taylor appointed assistant superintendent, Campbellton division.

D. F. Mills appointed transport economist and **J. D. Reynett** named assistant transport economist, Montreal.

George R. Lutes appointed general car accountant.

CHESAPEAKE & OHIO.—**C. Vernon Cowan,** general superintendent transportation Richmond, Va., named regional manager, eastern region, at that point, succeeding **Erle T. Rucker,** appointed assistant regional manager, northern region, Detroit, Mich. A photograph of Mr. Cowan was published in Railway Age, July 9, 1956, p. 16. Mr. Rucker replaces **Kenneth T. Reed,** named general superintendent transportation, Richmond, with a systemwide responsibility for freight and passenger transportation. **E. M. Whanger,** director of tax administration, finance department, Cleveland, named special assistant to vice-president—operations, Cleveland. **R. G. McGhee,** assistant to vice-president—operations, Richmond, appointed assistant to eastern regional manager. **W. C. Pinschmidt,** engineering assistant to vice-president—construction and maintenance, becomes fleet rentals manager, Richmond. **C. R. Smith,** special assistant to vice-president—construction and maintenance, Huntington, W.Va., named budget director of that department. **R. L. Milner,** staff assistant to vice-president—construction and maintenance, Huntington, appointed staff assistant to chief engineer at that point.

Robert J. Bowman, chairman, executive committee, retired June 21. Mr. Bowman was C&O president from 1946 to 1948.

E. G. McDougle, superintendent, Newport News—Norfolk (Va.) terminal, promoted to assistant to vice-president — operations, Richmond, Va. **C. H. Manning,** assistant division superintendent, Newport News—Norfolk Terminal, succeeds Mr. McDougle as superintendent of that division. **J. D. Mansfield** named assistant to superintendent, Ashland, Ky., succeeding the late **G. W. Tolliver.**

CHICAGO & EASTERN ILLINOIS.— **George H. Smith,** financial vice-president, Chicago, retired June 30 after 47 years of service

NEW YORK CENTRAL.—**John G. Patten,** freight sales manager, Boston, named assistant vice-president, freight sales and service, at that point, succeeding **Wallace M. Snow,** transferred to New York in the same capacity. Mr. Snow replaces **Harry D. Vail,** retired.

Charles E. Hanert, office engineer (signals), Northern district, Detroit, Mich., promoted to office engineer, system, Cleveland, Ohio, succeeding **John W. Curran,** promoted to system chief signal inspector, replacing the late **C. T. Evans.**

Leo J. Ritter, electronics engineer, New York, appointed superintendent of communications, New York district, New York.

Edward R. Ahlborn, assistant passenger sales manager, Albany, N. Y., appointed to new position of director of passenger sales and will plan and establish passenger sales programs and procedures. **Anthony A. Cicenas,** division passenger sales manager, Toledo, Ohio, succeeds Mr. Ahlborn at Albany.

Harry A. Klester appointed fuel engineer, New York, and will handle matters dealing with engineering and technical phases of coal development and marketing for the system. Position of coal sales manager, engineering and development, discontinued. **J. W. Wood** appointed district safety supervisor and **J. J. Sheehan** named assistant district safety supervisor, New York district.

A. Matthews, Jr., appointed staff engineer, New York.

NICKEL PLATE.—**Kenneth F. Brabender,** terminal superintendent, Cleveland, appointed superintendent, Fort Wayne—Chicago divisions, Fort Wayne, Ind., succeeding the late **J. H. Hammond.**

SANTA FE.—**R. M. Champion** appointed acting superintendent, Los Angeles Terminal division, Los Angeles, succeeding **B. O. Bernard,** on leave of absence.

SEABOARD.—**J. N. McBride,** general agricultural agent, Savannah, Ga., transferred to new division office building, 3019 Warrington Avenue, Jacksonville, Fla.

J. A. Kane, assistant general freight agent, Norfolk, appointed assistant freight traffic manager (Commission Cases) at that point.

SOUTHERN PACIFIC.—**Dr. V. M. Strange** appointed chief surgeon, Southern Pacific Hospital Department, San Francisco, to succeed **Dr. W. W. Washburn,** who retired June 30.

TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS.—**W. E. Howald** appointed vice-president, secretary and comptroller. **George P. Mueller** named general counsel, succeeding the late **Warner Fuller** (Railway Age, July 1, p. 44). Position of vice-president and general counsel abolished.

TORONTO, HAMILTON & BUFFALO.—**J. W. Rowley,** master mechanic, Hamilton, Ont., appointed chief mechanical officer, with jurisdiction over the locomotive and car departments, Hamilton. **N. H. Craig,** superintendent car department, retired July 1. Positions of master mechanic and superintendent car department abolished.

UNION PACIFIC.—**Paul G. Beach,** advertising manager, Los Angeles, transferred to Omaha, Neb., succeeding **Charles P. Moore,** retired. **H. J. Forbes** named to replace Mr. Beach.

WABASH.—**Arthur F. LeGros,** representative freight department and traveling freight and passenger agent, Philadelphia, appointed general agent, freight department, Cleveland, Ohio, succeeding **Joseph C. O'Boyle,** who retired July 1.

J. E. Wolfe
CB&Q

Kenneth F. Brabender
NYC&StL

John G. Patten
NYC

Edward R. Ahlborn
NYC

OBITUARY

L. Russell Kelce, 59, chairman of the board, **Chicago Great Western,** died June 30 at St. Louis.

Charles R. Crook, 73, honorary secretary, **Canadian Railway Club,** died June 21.

Edward J. Ryan, 68, retired trainmaster of the **New York Central,** died June 25.

Will Seaway Affect RRs?

(*Continued from page* 27)

found which admit they've not resisted the Seaway's development. The Burlington is one. Others, such as the Chicago & Northern Western, are "not unenthusiastic" about it.

The Northern Pacific exemplifies the latter view. President Robert S. Macfarlane is on record that he doesn't think the Seaway will usher in a period of unprecedented prosperity for Minnesota (through the port of Duluth), but because of NP's lines in the state, he'd like to see it happen that way.

Railroads throughout the grain belt are arguing the merits of a study recently published by Indiana University which asserts that the Seaway will make big changes in the pattern of grain transportation.

Grain, the study says, will flow in much greater quantities to such ports as Duluth, Milwaukee and Chicago from the producing states, and then move overseas via the Seaway.

But some railroaders point out that the study was made for the Chicago Board of Trade, and that it underestimates the importance of Gulf and Atlantic ports.

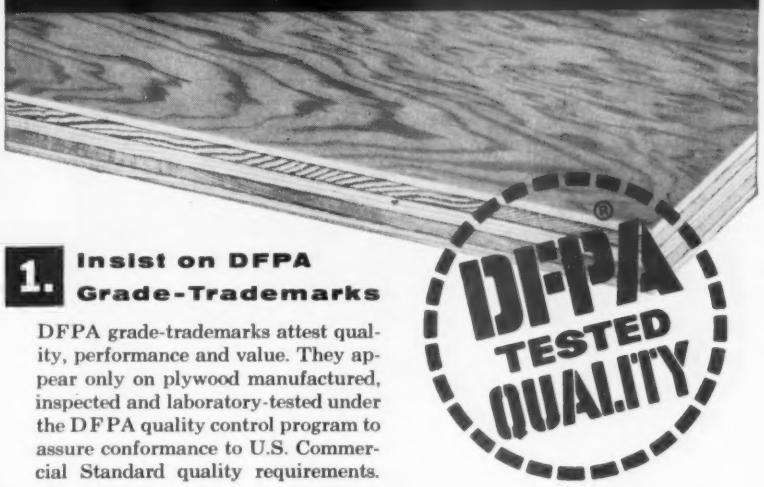
And amid the confusion runs this line of argument: About 40% of grain exports move in the four winter months when the Seaway will be impassable. Yet the cost of storing grain is a fraction of the cost of moving it by rail to the Atlantic, so probably grain will be stored during the winter and moved by Seaway come spring. But, on the other hand, Europe's need for U.S. grain continues through the winter and European ports lack sufficient storage to keep a winter's supply, so considerable grain inevitably must move to the Atlantic by rail during the winter.

In Short, Wait and See

So, no one knows yet just what effect the Seaway will have on rail traffic, industrial or agricultural. The consensus among railroaders seems to be that there's still time to study, to plan for the more obvious industrial expansion.

As most railroad men see the situation today, Seaway vessels can't operate without a distributor in the hinterland back of the dock. That's the role they intend to play.

FIR PLYWOOD PURCHASING GUIDE



DFPA TESTED QUALITY

1. Insist on DFPA Grade-Trademarks

DFPA grade-trademarks attest quality, performance and value. They appear only on plywood manufactured, inspected and laboratory-tested under the DFPA quality control program to assure conformance to U.S. Commercial Standard quality requirements.

2. Choose the right grade for each job

DFPA quality-tested fir plywood comes in two types: 1. *Exterior* (waterproof glue for permanent outdoor exposure); 2. *Interior* (moisture-resistant glue) for use indoors, temporary outdoor uses and sheathing. Within each type are *appearance grades* to meet the exact needs of any given job. Most popular grades are shown below: (other grades including panels made of other western softwoods, also available)

TYPICAL USE	EXTERIOR-TYPE (Waterproof glue)	INTERIOR-TYPE (Moisture-resistant glue)
Where appearance of both sides important. Cabinet doors, single thickness walls, etc.	EXT-DFPA-A-A	INTERIOR-A-A-DFPA
Where only one side will be seen. Siding, paneling, signs, fixtures.	PlyShield® (A-C)	PlyPanel® (A-D)
Special concrete form grades. Both faces sound, solid, smooth.	Ext. PlyForm® (B-B) Maximum Re-use	Int. PlyForm® (B-B) Multiple Re-use
Unsanded structural and maintenance panel. Sheathing, crating, temporary screening.	Exterior Glue PlyScord® (C-D)	PlyScord® (C-D)

SIZES: Standard fir plywood thicknesses are from ¼" through ¾"; standard size is 4' wide, 8' long. Other thicknesses and sizes are also available, including "king-size" scarfed panels up to 30' and 50' long.

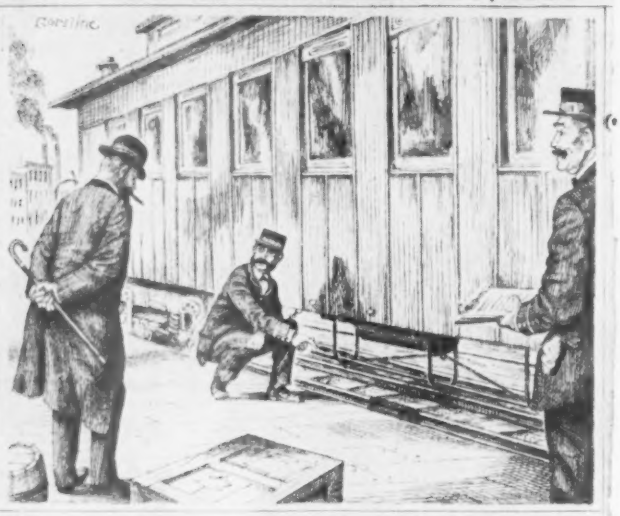
TEXTURED FIR PLYWOOD – Fir plywood comes in several smart textured panels for special decorative applications such as siding, paneling, displays and fixtures. These include *Texture One-Eleven* Exterior plywood (deep parallel grove pattern, shiplapped edges) and panels with attractive *brushed, striated,* or *embossed* surfaces.

OVERLAID FIR PLYWOOD – is Exterior fir plywood with resin-fiber overlay permanently fused to one or both sides of panel. *High density* is hard, glossy, abrasion-resistant (use for long-lasting signs, shelving, concrete forms); *Medium density* overlaid plywood is smooth, with texture similar to drawing paper (ideal paint base for signs, fixtures, siding).

FREE WALL HANGERS – Handsome 18"x33" wall hanger. Handy fir plywood grade-use-specification guide. Order one for everyone in your firm who specifies fir plywood. Also available, specification portfolio. Includes detailed description all grades, sizes, specialty panels, Commercial Standards requirements. Offer good USA only. Douglas Fir Plywood Assoc., Tacoma 2, Wash., Dept. 192.

LEILE

FEBRUARY 20, 1885



NEW TELEGRAPH EMPLOYS ELECTRICAL NUISANCE

NEW YORK, Feb. 20, 1885 — The phenomenon called *induction*, which has been, and indeed is now, a great annoyance in the working of telegraph and telephone lines, is being put to practical use by an imaginative device called the Phelps Induction Telegraph. An instance will, perhaps, better illustrate the nature of this phenomenon.

A gentleman attempting to use his private telephone one morning was astonished to hear the word "Hello, Chicago", and a long subsequent conversation carried on between Chicago and Jersey City. This was possible, not because his instrument was in any way connected with the primary circuit, but simply through an induced current which was set up in another telephone wire which chanced to be about 7 ft. away.

Thus, the Phelps device, (an external [illegible] is sh[illegible]

From the above "imaginative device" to the modern miracle of closed-circuit television, American railroads are quick to adopt proven innovations for more efficient operation. And from its infancy, Graybar has always kept its stock and services in tune with the newest developments in railroad communications. Wire and cables . . . carrier telephone and telegraph equipment . . . closed-circuit television, . . . sound systems of all types, each of the thousands of items needed by modern railroads can be supplied through more than 130 conveniently located Graybar offices and warehouses. And you can rely on the same experienced Graybar service in the fields of lighting, ventilation, power apparatus, control equipment and tools. Check your Railroad Pocket list for the address of your nearby Graybar representative. Call him whenever you need assistance.

100,000 electrical items are distributed throughout the nation... via GraybaR

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GRAYBAR ELECTRIC COMPANY, 420 LEXINGTON AVENUE, NEW YORK 17, N. Y.
OFFICES AND WAREHOUSES IN OVER 130 PRINCIPAL CITIES

1st RR 'Brain'

(*Continued from page* 36)

through the computer. It draws from its "memory" such data as pay rates and deductions before producing a second tape from which the pay checks are produced on a high speed printer hooked into the system.

With three programs on the machine, the road is anxious to give it more work to do. What is to be the next assignment?

Very possibly it will be the road's rail wear study in which the problem to be computed is when given stretches of track should be replaced.

The computer's job in this program would be to digest such data as the weight and present age of the track, the degree of grade and the nature of the traffic moving over it, including average speeds, direction, train weight and density. Other factors include curvature (the inside rail differing from the outboard one), drainage, weather and ballast.

Efficient Use of Manpower

It's envisioned that roadway maintenance departments will not only have this sort of guidance to assist their track replacement decisions, but can also rely on it to get better use of manpower through more efficient scheduling of work crews. Also, more dependable track supply inventories are foreseen.

The computer's versatility is well-illustrated in connection with this propect. Not only can it produce the pertinent statistics but, through hook-up with the printer, it can actually plot graphic curves of rail wear, providing both "normal" expectancy and upper and lower limit curves. What is actually done is that "markers" are typed at great speed onto the printed paper along a predetermined axis, leaving only the link-up of the points to be done manually.

Beyond this, freight revenue accounting and coal traffic statistical analyses are expected to be the next jobs on the machine—sometime later this year. These programs are now being run in parallel operations. A set of reports concerning sales statistics and traffic patterns involving routes and commodities carried are to be developed. These programs are most likely to be followed by purchases and stores and inventory control programs now being prepared.

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100—ALL STEEL 70-TON CAPACITY BALLAST CARS.
50—ALL STEEL BOX CARS.
50—HEAVY STEEL UNDERFRAME STOCK CARS.
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8—ALL STEEL PASSENGER CARS.
1—ALL STEEL COMBINATION DINING AND LOUNGE CAR.
2—SULPHURIC ACID TANK CARS.
1—65-TON DIESEL-ELECTRIC LOCOMOTIVE.
100—CAR SETS 70-TON CAPACITY, DALMAN TYPE TRUCKS.
2—FLAT CARS—70 FOOT.

COMPLETE INVENTORY OF ALL TYPES FREIGHT CAR REPAIR PARTS.
WE ARE BUYERS OF RAILROAD CARS AND EQUIPMENT—SUBMIT YOUR OFFERINGS FOR QUICK ACTION.

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New General Electric Traction Generators
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7 Model GT-591-A 1200 HP
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RAILROAD CARS FOR INTERPLANT USE
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WESTINGHOUSE — Mercury Arc. Ignitron 3/60/44,000 AC-15,000V. DC, Automatic Controls.
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American Brake Shoe Company 44-45
Automatic Electric Sales Corporation 8
Barco Manufacturing Company 23
Bendix Aviation Corporation, Scintilla Division 37
Bethlehem Steel Company 3
Buckeye Steel Castings Company 39
Budd Company, The 12-13
Caterpillar Tractor Company 28
Crucible Steel Company of America, Springs Division 42
Douglas Fir Plywood Association 55
Esso Standard Oil Company 22
Exide Industrial Division 48-49
General Steel Castings 11
Graybar Electric Company 56
Grip Nut Company 57
Hertz Rent A Car System 6
Industrial Brownhoist Corporation 32
International Steel Company 33
Kerite Company, The ..... Inside Back Cover
Lipsett Steel Products Inc. 15
Mortell Company, J. W. 47
National Malleable & Steel Castings Company 30-31
Pittsburgh Plate Glass Company 43
Portland Cement Association 40
Railway Truck Corporation 41
Sinclair Refining Company 29
Standard Car Truck Company 14
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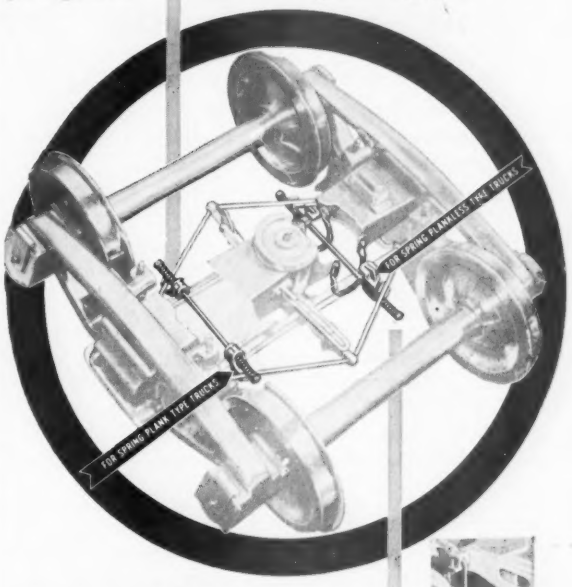
Westinghouse Air Brake Company, Air Brake Division 17

in your rebuilding program

the GRIPCO Brake Beam Safety Support



gives added safety at minimum cost

SPRING-PLANK TYPE

can be designed for ANY Brake Beam

The Gripco Brake Beam Safety Support provides the greatest safety at lowest cost. Its dependability has been proven over years of actual service. Gripco Safety Supports are low in original cost, low in application cost and low in maintenance cost, even after years of service.

SPRING-PLANKLESS TYPE
(Safety Loops included)

1. Supports the brake beam in event of brake beam or hanger failure.
2. Holds brake beam in horizontal position.
3. Holds brake shoes in proper position in relation to the periphery of the wheel.
4. The brake release feature pulls brake shoes away from wheel contact instantly when brakes are released.
5. Prevents unnecessary wheel and shoe wear caused by dragging brake shoes.
6. Gripco Supports can be removed and replaced without removing nuts.
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Getting More Good from the AAR

Most railroad people certainly do not spare themselves in industry criticism. And no aspect of the business gets more critical attention than the Association of American Railroads. Self-criticism is certainly a healthier habit than self-satisfaction, but there can be a surfeit, even of good things.

Anyhow, a year or two ago a couple of railroad executives were discussing AAR. One of them said:

> **"AAR'S primary difficulties lie, not with its full-time staff in Washington, but with the 100-odd strong individualists who head the member railroads. If the member roads had a clearer idea of what they want AAR to do, there wouldn't be much difficulty in getting the AAR staff to carry out a consistent program."**

Whether that diagnosis is fully accurate or not, it certainly is true in part. If it were possible for all AAR member executives to see controversial industry problems in all their complexity—the way the AAR staff necessarily sees them, right on the firing line—it is quite likely that there would be a higher degree of unanimity among railroad people regarding some of these questions. And from improved harmony about objectives, the AAR staff would be greatly invigorated in their pursuit.

Not Just a Trade Association

Railroad opinion about the AAR is colored, to some degree, from the belief that it is a "trade association"—hence fairly comparable with trade associations in other businesses. Actually, the AAR is much more than a trade association. It has all the duties and problems of an association of manufacturers of gussets (or any other product). In addition, it is an integral part of the machinery of day-to-day railroad operations. The railroads are the only businesses in the country which, every day, use each other's equipment and serve each other's customers. And the AAR is the principal agency for doing the "housekeeping" which this interchange involves. It is this huge operating function—quite unlike that performed by the trade association for any other business—which explains the size and cost of the AAR organization.

Just consider the detailed work necessary to keep cars and locomotives sufficiently uniform—so they can pass from the tracks of the owning railroad to those of any other railroad, without the customers' knowing the difference. The details of inter-company agreement required to accomplish this result are colossal. If AAR performance is measured—not in relation to that of other trade associations with so much less to do, but in relation to the magnitude of its necessary and unique task—then there will be found much less to criticize.

Room for Improvement

Because a job is complex and difficult, however, is no good reason why it cannot be done better. The task AAR performs for the railroads could be improved upon, as nobody in or out of the association would deny. The first step in improvement, however, lies in fully appreciating the innate complexity and difficulty of the problem. No doctor would likely succeed in curing a case of double pneumonia, if he thought the malady was only a slight cold.

Last year the AAR employed Robert Heller & Associates, Inc., management consultants, to study its operations and make recommendations for improvement. The report of these consultants has not been made public. However, those who have attended the presentation of parts of the report reveal that it embraces, at least, three activities—freight car supply; public and legislative relations; and basic research. Quite apart from whatever the consultants may have recommended in these areas—the fact remains that in these three areas there is probably occurring more serious discussion than at any other time in history.

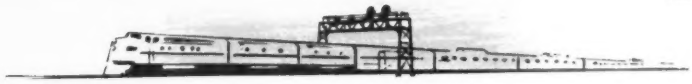
One of the greatest difficulties which confronts the AAR is the almost impossible task which is laid upon the association's chief executive. The job requires somewhat the same unusual combination of talents ("inside" mastery of detail and "outside" diplomacy and eloquence) called for in a President of the United States. The railroads are fortunate in the caliber of men who have filled this post. A leader doing a difficult job can always do it better, to the degree that his work is understood and supported.

The association can do a great deal more for the railroads than it has done so far. Intensified technological and economic research, more comprehensive public relations and legislative relations work, solution of the problem of car supply, education of employees and officers—there are a whole host of activities in the AAR's bailiwick, wherein intensified performance would mean more to the railroads than almost anything they can do as individual companies.

> **So, more effective performance by AAR is high on the list of industry "musts." It will likely occur to the degree that management of each member railroad fully informs itself on association problems and means to their solution. And gives AAR management full and understanding support to pursue its objectives.**

It Takes a Long Time To Bring Excellence To Maturity*

*Publilius Syrus: 42 B. C.



Samuel Finley Breese Morse:

Morse was a remarkable prophet. In 1868 he wrote, "In commending Kerite especially for telegraphic purposes I would by no means leave out of view its other various applications in the arts no less extensive and useful."

Some 70 years later, Kerite was chosen for a most singular art—the production of the first special cables for the Manhattan Project, Oak Ridge, Tennessee. The Kerite Company was *the only organization* entrusted to design and manufacture 15 entirely new types of cable to help speed the production of the world's first atomic bombs. Never before had flexible cables (more than a million feet) been used on such unusual voltages. The inherited skill and integrity of more than three generations of dedicated Kerite men insures the highest standards of manufacture of all Kerite cable—standards upon which American industry depends.

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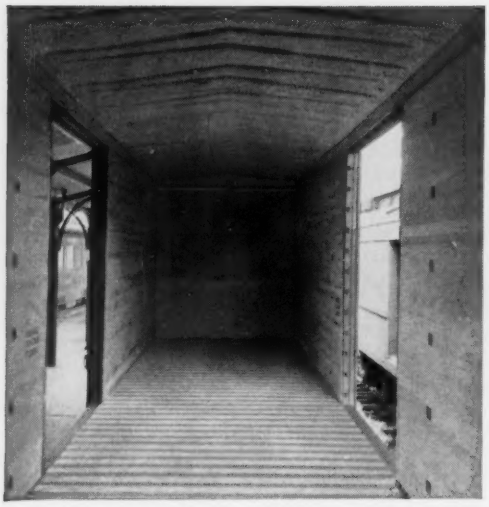
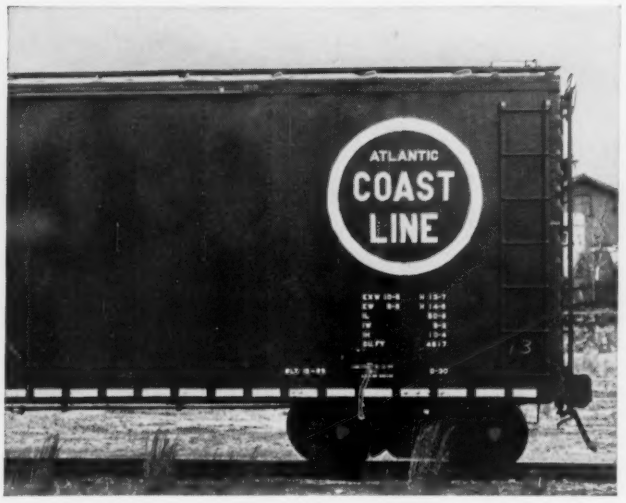
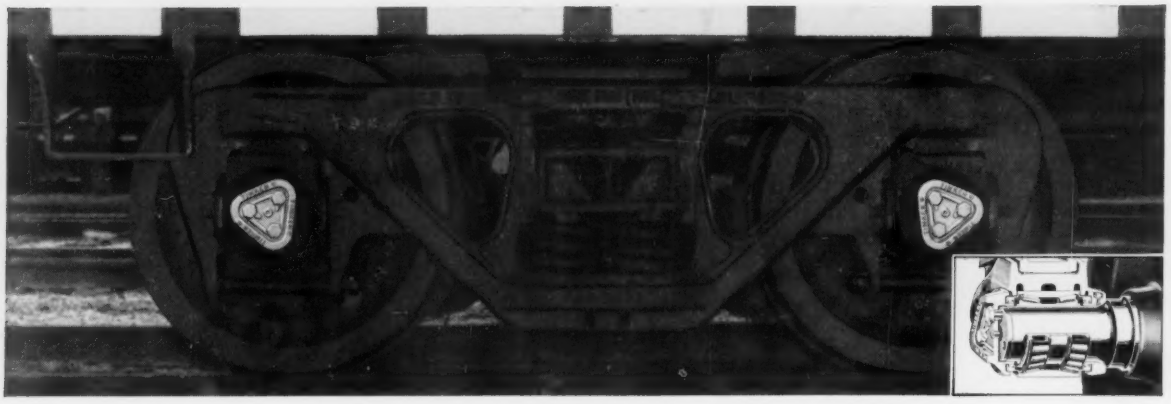
LEADED TO PROGRESS
PIJ
MEMBER

INSIDE... AND OUT





ACL's 500 new-design box cars have everything a shipper wants including Timken® roller bearings



TO provide shippers with the best possible freight service, Atlantic Coast Line recently put into service 500 of the strongest box cars ever built. Vermin and splinter-proof floors, reinforced steel frames and roofs, special anchoring devices are all of the latest design to give freight maximum protection.

These new cars are for the fastest scheduled freight run in the country. To make sure they meet schedules, ACL specified Timken® tapered roller bearings. With Timken bearings, ACL licks the hot box problem, No. 1 cause of freight train delays. Full speed can be maintained. And trains will move through terminals faster. It takes only a touch to inspect Timken bearings—cutting terminal bearing inspection time 90%.

With over 7,000 cars on Timken bearings, ACL is America's leading "Roller Freight" railroad. When all railroads go "Roller Freight", they'll save an estimated $224,000,000 in reduced operating and maintenance costs —give better service than ever. The Timken Roller Bearing Company, Canton 6, Ohio. Cable: "TIMROSCO".

TIMKEN TAPERED ROLLER BEARINGS ROLL THE LOAD

TRADE-MARK REG. U. S. PAT. OFF.